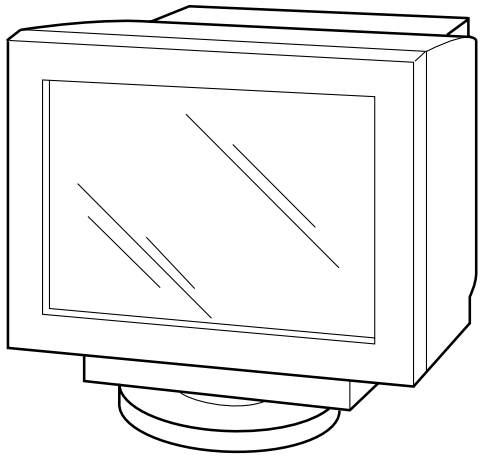
6551-T3N/6551-U3N

SERVICE MANUAL

AEP Model

Chassis No. SCC-L40A-A (6551-T3N)
Chassis No. SCC-L40B-A (6551-U3N)



F99 CHASSIS

SPECIFICATIONS

Picture tube	0.24 mm aperture grille pitch 19 inches measured diagonally 90-degree deflection
Viewable image size	Approx. 365 × 274 mm (w/h) (14 3/8 × 10 7/8 inches) 18.0" viewable diagonal
Resolution	Horizontal: Max. 1600 dots Vertical: Max. 1200 lines
Standard image area	Approx. 352 × 264 mm (w/h) (13 7/8 × 10 1/2 inches)
Deflection frequency*	Horizontal: 30 to 107kHz Vertical: 48 to 120 Hz 256 < Total Line < 2048
AC input voltage/current	220 to 240 V, 50 – 60 Hz, Max. 1.0 A
Power consumption	Max. 140 W
Operating temperature	10°C to 40°C
Dimensions	Approx. 462 × 462 × 474 mm (w/h/d) (18 1/4 × 18 1/4 × 18 3/4 inches)
Mass	Approx. 27 kg (59 lb 8 oz)

* Recommended horizontal and vertical timing condition
- Horizontal sync width should be more than 1.0 µsec.
- Horizontal blanking width should be more than 3.0□µsec.
- Vertical blanking width should be more than 450 µsec.

Design and specifications are subject to change without notice.

MODEL	SPEC.	
	BODY COLOR	DEST.
6551-T3N	WHITE TYPE	AEP
6551-U3N	BLACK TYPE	AEP

TRINITRON® COLOR GRAPHIC DISPLAY

IBM®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cords for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the B+ and HV to see if they are specified values. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
8. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC Leakage. Check leakage as described below.

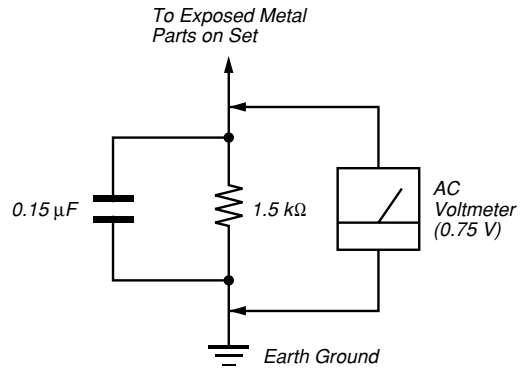


Fig. A. Using an AC voltmeter to check AC leakage.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers).

Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOMs that are suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

WARNING!!

NEVER TURN ON THE POWER IN A CONDITION IN WHICH THE DEGAUSS COIL HAS BEEN REMOVED.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL FOR SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

POWER SAVING FUNCTION

This monitor meets the power-saving guidelines set by VESA and ENERGY STAR, as well as the more stringent NUTEK .
If the monitor is connected to a computer or video graphics board that is VESA DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

Notes

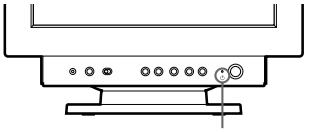
- When your computer is in a power saving mode, MONITOR IS IN POWER SAVE MODE appears on the screen if you press any button on the monitor (page 17). After a few seconds, the monitor enters the power saving mode again. Once the horizontal and vertical sync signals are detected, the monitor automatically resumes its normal operation mode.
- The power management feature is invoked when the computer recognizes that you have not used your mouse or keyboard for a user-definable period of time.
- IBM recommends that you switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

	Power consumption mode	Screen	Horizontal sync signal	Vertical sync signal	Power consumption	Recovery time	⏻ indicator
1	Normal operation	active	present	present	≤ 140 W	—	Green
2	Standby (1st mode)	blank	absent	present	≤ 15 W	Approx. 5 sec.	Green and orange alternate
3	Suspend (2nd mode) (sleep)*	blank	present	absent	≤ 15 W	Approx. 5 sec.	Green and orange alternate
4	Active-off (3rd mode) (deep sleep)*	blank	absent	absent	≤ 3 W	Approx. 15 sec.	Orange
5	Power-off	—	—	—	≤ 0.5 W	—	Off

* "Sleep" and "deep sleep" are power saving modes defined by the Environmental Protection Agency.

DIAGNOSIS

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer, the screen will go blank and the ⏻ indicator will either light up green or flash orange.



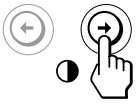
⏻ indicator

If the ⏻ indicator is green

1 Disconnect the video input cable or turn off the connected computer.

2 Press the ⏻ button twice to turn the monitor off and then on.

3 Press and hold the ➡ button for 2 seconds before the monitor enters power saving mode.



If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cable and check the condition of your computer.

If the color bars do not appear, there is a potential monitor failure. Inform the IBM HelpCenter of the monitor's condition.

If the ⏻ indicator is flashing orange

Press the ⏻ button twice to turn the monitor off and then on.

If the ⏻ indicator lights up green, the monitor is working properly.

If the ⏻ indicator is still flashing, there is a potential monitor failure. Inform the IBM HelpCenter of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the make and model of your computer and video board.

TIMING SPECIFICATION

MODE	TEST MODE				
MODE AT PRODUCTION	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5
RESOLUTION	640 X 480	640 X 480	800 X 600	800 X 600	1024 X 768
CLOCK	25.175 MHz	36.000 MHz	49.500 MHz	56.250 MHz	78.750 MHz
HORIZONTAL					
H-FREQ	31.469 kHz	43.269 kHz	46.875 kHz	53.674 kHz	60.023 kHz
	usec	usec	usec	usec	usec
H. TOTAL	31.778	23.111	21.333	18.631	16.660
H. BLK	6.356	5.333	5.172	4.409	3.657
H. FP	0.636	1.556	0.323	0.569	0.203
H. SYNC	3.813	1.556	1.616	1.138	1.219
H. BP	1.907	2.222	3.232	2.702	2.235
H. ACTIV	25.422	17.778	16.162	14.222	13.003
– VERTICAL –					
V. FREQ(HZ)	59.940 Hz	85.008 Hz	75.000 Hz	85.061 Hz	75.029 Hz
	lines	lines	lines	lines	lines
V. TOTAL	525	509	625	631	800
V. BLK	45	29	25	31	32
V. FP	10	1	1	1	1
V. SYNC	2	3	3	3	3
V. BP	33	25	21	27	28
V. ACTIV	480	480	600	600	768
– SYNC –					
INT(G)	NO	NO	NO	NO	NO
EXT(H/V)/POLARITY	YES N/N	YES N/N	YES P/P	YES P/P	YES P/P
EXT(CS) /POLARITY	NO	NO	NO	NO	NO
INT/NON INT	NON INT	NON INT	NON INT	NON INT	NON INT
SIZE	352 X 264 mm	352 X 264 mm	352 X 264 mm	352 X 264 mm	352 X 264 mm

MODE	TEST MODE				
MODE AT PRODUCTION	MODE 6	MODE 7	MODE 8	MODE 9	MODE 10
RESOLUTION	1024 X 768	1280 X 1024	1280 X 1024	1600 X 1200	1600 X 1200
CLOCK	94.500 MHz	135.000 MHz	157.500 MHz	202.500 MHz	229.500 MHz
HORIZONTAL					
H-FREQ	68.677 kHz	79.976 kHz	91.146 kHz	93.750 kHz	106.250 kHz
	usec	usec	usec	usec	usec
H. TOTAL	14.561	12.504	10.971	10.667	9.412
H. BLK	3.725	3.022	2.844	2.765	2.440
H. FP	0.508	0.119	0.406	0.316	0.279
H. SYNC	1.016	1.067	1.016	0.948	0.837
H. BP	2.201	1.837	1.422	1.501	1.325
H. ACTIV	10.836	9.481	8.127	7.901	6.972
– VERTICAL –					
V. FREQ(HZ)	84.997 Hz	75.025 Hz	85.024 Hz	75.000 Hz	85.000 Hz
	lines	lines	lines	lines	lines
V. TOTAL	808	1066	1072	1250	1250
V. BLK	40	42	48	50	50
V. FP	1	1	1	1	1
V. SYNC	3	3	3	3	3
V. BP	36	38	44	46	46
V. ACTIV	768	1024	1024	1200	1200
– SYNC –					
INT(G)	NO	NO	NO	NO	NO
EXT(H/V)/POLARITY	YES P/P	YES P/P	YES P/P	YES P/P	YES P/P
EXT(CS) /POLARITY	NO	NO	NO	NO	NO
INT/NON INT	NON INT	NON INT	NON INT	NON INT	NON INT
SIZE	352 X 264 mm	330 X 264 mm	330 X 264 mm	352 X 264 mm	352 X 264 mm

99.04.26 VER.

TABLE OF CONTENTS

Section	Title	Page
1.	**GENERAL**	1-1
2.	**DISASSEMBLY**	
2-1.	Cabinet Removal	2-1
2-2.	Shield (EMI, Video), Side Cover (L and R) Removal	2-1
2-3.	A Board Removal	2-2
2-4.	Rear Shield Complete Assy, D Board Removal	2-2
2-5.	Service Position	2-3
2-6.	H Board Removal	2-3
2-7.	Picture Tube Removal	2-4
2-8.	Harness Location	2-5
3.	**SAFETY RELATED ADJUSTMENT**	3-1
4.	**ADJUSTMENTS**	4-1
5.	**DIAGRAMS**	
5-1.	Block Diagrams	5-1
5-2.	Frame Schematic Diagram	5-5
5-3.	Circuit Boards Location	5-6
5-4.	Schematic Diagrams and Printed Wiring Boards	5-7
(1)	Schematic Diagram of A Board	5-9
(2)	Schematic Diagrams of D (ⓐ,ⓑ,ⓒ) Board	5-11
(3)	Schematic Diagrams of N, H Boards	5-19
5-5.	Semiconductors	5-21
6.	**EXPLODED VIEWS**	
6-1.	Chassis	6-1
6-2.	Picture Tube	6-2
6-3.	Packing Materials	6-3
7.	**ELECTRICAL PARTS LIST**	7-1

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

SECTION 1
GENERAL

Precautions

Installation

- Prevent internal heat build-up by allowing adequate air circulation. Do not place the monitor on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the monitor near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration, or shock.
- Do not place the monitor near equipment which generates magnetism, such as a transformer or high voltage power lines.

Maintenance

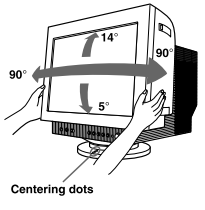
- Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder, or solvent, such as alcohol or benzine.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasive items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Clean the screen with a soft cloth. If you use a glass cleaning liquid, do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.

Transportation

When you transport this monitor for repair or shipment, use the original carton and packing materials.

Use of the Tilt-Swivel

This monitor can be adjusted within the angles shown below. To find the center of the monitor's turning radius, align the center of the monitor's screen with the centering dots on the stand.
Hold the monitor at the bottom with both hands when you turn it horizontally or vertically. Be careful not to pinch your fingers at the back of the monitor when you tilt the monitor up vertically.

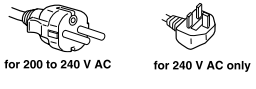


Note
Do not remove the tilt-swivel base from the monitor.

Warning on power connection

- Use an appropriate power cord for your local power supply.

Examples of plug types:



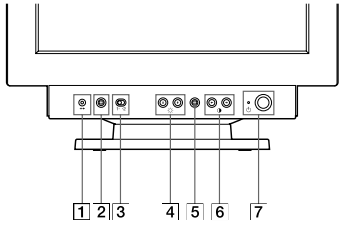
- Before disconnecting the power cord, wait at least 30 seconds after turning off the power to allow the static electricity on the CRT display surface to discharge.
- After the power has been turned on, the CRT is demagnetized (degaussed) for about 5 seconds. This generates a strong magnetic field around the metal frame, which may affect the data stored on magnetic tapes and disks near the bezel. Place magnetic recording equipment, tapes, and disks away from this monitor.

The equipment should be installed near an easily accessible electrical outlet.

Identifying Parts and Controls

See the pages in parentheses for further details.

Front



1 ⇢ (reset) button (page 15)
Resets the adjustments to the factory settings.

2 ⊡ (auto sizing and centering) button (page 5)
This button automatically adjusts the size and centering of the picture.

3 Input 1-2 switch (pages 5)
This switch selects the INPUT 1 (Video input 1 connector) or INPUT 2 (Video input 2 connector).

4 ☼ (brightness) down and up (🡓/🡑) buttons (pages 6 – 15)
Adjust the picture brightness.

Function as the (🡓/🡑) buttons when adjusting other items.

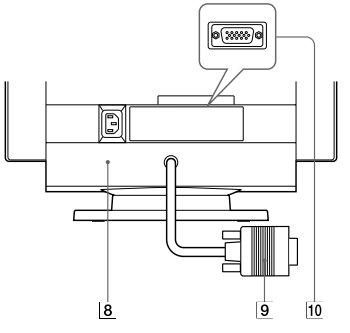
5 ⊜ (menu) button (pages 6 – 15, 17)
Displays the MENU OSD.

6 ◑ (contrast) left and right (🡐/🡒) buttons (pages 6 – 15, 20)
Adjust the contrast.

Function as the (🡐/🡒) buttons when adjusting other items.

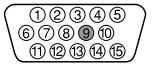
7 ⏻ (power) switch and indicator (pages 16, 20)
Turns the monitor on or off.
The power indicator lights up in green when the monitor is turned on, and either flashes in green and orange, or lights up in orange when the monitor is in power saving mode.

Rear



8 AC IN connector (page 4)
Provides AC power to the monitor.

9 Video input 1 connector (HD15) (page 4)
Inputs RGB video signals (0.700 Vp-p, positive) and SYNC signals.



Pin No.	Signal	Pin No.	Signal
1	Red	8	Blue Ground
2	Green (Sync on Green)	9	—
		10	Ground
3	Blue	11	ID (Ground)
4	ID (Ground)	12	Bi-Directional Data (SDA)*
5	DDC Ground*		
6	Red Ground	13	H. Sync
7	Green Ground	14	V. Sync
		15	Data Clock(SCL)*

* Display Data Channel (DDC) Standard of VESA

10 Video input 2 connector (HD15) (page 4)
Inputs RGB video signals (0.700 Vp-p, positive) and SYNC signals.
See the above table for the pin assignment.

EN

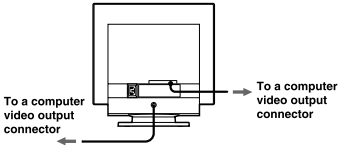
Setup

This monitor works with platforms running at horizontal frequencies between 30 and 107kHz.

Step 1: Make sure the computer and monitor are switched off

Step 2: Connect the monitor to the computer

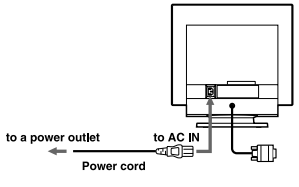
Connect the video signal cable to the video output of the computer.



Note
Do not short the pins of the video signal cable.

Step 3: Connect the power cord

With the monitor switched off, connect one end of the proper power cord for your local supply to the monitor and the other end to a power outlet.



Step 4: Turn on the monitor and computer

Step 5: Adjust the monitor's controls according to your personal preference

The installation of your monitor is complete.

Note
If no picture appears on the screen and "OUT OF SCAN RANGE" or "MONITOR IS IN POWER SAVE MODE" appears on the screen, see "Warning Messages" on page 17.

Workplace Preparation

Positioning the Monitor
Choose a suitable place to position the monitor where it is not near fluorescent desk lighting or any equipment that produces magnetic fields that could cause interference. Ensure that the furniture or equipment can support the weight of the monitor. Allow at least 2 inches (50mm) ventilation space around the monitor.

Height
The monitor should be positioned so that the top of the screen is slightly below your eye level when you sit at your workstation.

Orientation
Choose a position that gives the least reflection from lights and windows, usually at a right angle to any windows. The monitor should be positioned directly in front of you so that you do not have to twist your body. Tilt the monitor to a comfortable viewing angle.

Working Practices

Rest
Take regular breaks. Vary your posture, and stand up and stretch occasionally as prolonged use of computer workstations can be tiring.

Back
You should sit back in the chair and use the backrest.

Hands
Use a light touch on the keyboard, keeping your hands and fingers relaxed. Allow a space in front of the keyboard to rest your wrists when not typing. Consider using a wristpad.

Eyesight
Working with monitors, in common with any kind of prolonged close work, can be visually demanding. Look away from the screen periodically and have your eyesight checked regularly.

Screen settings
Set the screen brightness and contrast to a comfortable level. You may have to adjust this as the lighting changes during the day. Many application programs let you select color combinations which can help you to view in comfort.

Selecting the Input Signal

You can connect two computers to this monitor using the video input 1 and video input 2 connectors. To select one of the two computers, use the Input 1-2 switch.

Move the Input 1-2 switch.
The selected connector appears on the screen for 3 seconds.

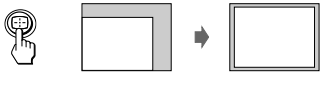
"INPUT 1" (video input 1 connector) or "INPUT 2" (video input 2 connector) appears on the screen.

Note
If no signal is input to the selected connector, NO INPUT SIGNAL appears on the screen. After a few seconds, the monitor enters the power saving mode. If this happens, switch to the other connector.

Automatically Sizing and Centering the Picture

You can easily adjust the picture to fill the screen by pressing the ⊡ (auto sizing and centering) button.

Press the ⊡ button.
The picture automatically fills the screen.



Notes
- This function is intended for use with a computer that provides a full-screen picture. It may not work properly if the background color is dark or if the input picture does not fill the screen to the edges.
- Pictures with an aspect ratio of 5:4 (resolution: 1280 × 1024) are displayed at their actual resolution and do not fill the screen to the edges.
- The displayed image moves for a few seconds when the ⊡ button is pressed. This is not a malfunction.

EN

1-2

Before adjusting

• Connect the monitor and the computer, and turn them on.

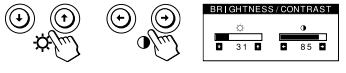
Selecting the On-screen Display Language

If you need to change the OSD language, see "Using the LANGUAGE On-screen Display" on page 11.
The default setting is English.

Adjusting the Picture Brightness and Contrast

Once the setting is adjusted , it will be stored in memory for all input signals received.

1 Press the ☼ (brightness) ↓/↑ or ◑ (contrast) ←/→ buttons.
The BRIGHTNESS/CONTRAST OSD appears.



2 For brightness adjustment
Press the ☼↓/↑ buttons.

↑ . . . for more brightness
↓ . . . for less brightness

For contrast adjustment
Press the ◑←/→ buttons.

→ . . . for more contrast
← . . . for less contrast

The OSD automatically disappears after about 3 seconds.

To reset, press the ⇢ (reset) button while the OSD is on. The brightness and contrast are both reset to the factory settings.

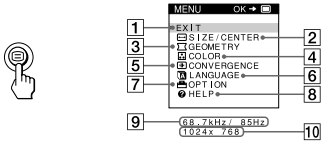
If you set sRGB to "ON" on the color setting, the brightness (☼) and contrast (◑) are automatically set to "31" and "85" respectively.
For more information about sRGB, see "Using the COLOR On-screen Display" on page 9.

Introducing the On-screen Display System

Most adjustments are made using the MENU OSD.

MENU OSD

Press the ☰ button to display the MENU OSD.
This MENU OSD contains links to the other OSDs described below.



1 **EXIT**
Closes the MENU OSD.

2 **SIZE/CENTER**
Displays the SIZE/CENTER OSD for adjusting the picture's size, centering, or zoom.

3 **GEOMETRY**
Displays the GEOMETRY OSD for adjusting the picture rotation and pincushion, etc.

4 **COLOR**
Displays the COLOR OSD for adjusting the color temperature.

5 **CONVERGENCE**
Displays the CONVERGENCE OSD for adjusting the picture's horizontal and vertical convergence.

6 **LANGUAGE**
Displays the LANGUAGE OSD for selecting the language.

7 **OPTION**
Displays the OPTION OSD for adjusting the OSD position, degaussing the screen, etc.

8 **HELP**
Displays the HELP OSD for viewing helpful hints and information about this monitor.

9 **The horizontal and vertical frequencies of the current input signal**
The horizontal and vertical frequencies of the current input signal are displayed.

10 **The resolution of the current input signal**
If the signal matches one of this monitor's factory preset modes, the resolution is displayed.

Using the SIZE/CENTER On-screen Display

The SIZE/CENTER settings allow you to adjust the picture's size, centering, or zoom.
Once the setting is adjusted, it will be stored in memory for the current input signal.

1 Press the ☰ button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "SIZE/CENTER" and press the ☰ button again.
The SIZE/CENTER OSD appears.

3 Press the ↓/↑ buttons to select the item you want to adjust.

Select	To
(Horizontal Centering)	adjust the horizontal centering of the picture
(Vertical Centering)	adjust the vertical centering of the picture
(Horizontal Sizing)	adjust the horizontal size of the picture
(Vertical Sizing)	adjust the vertical size of the picture
(Zoom)	enlarge or reduce the picture

4 Press the ←/→ buttons to adjust the settings.

Select	To
(Horizontal Centering)	→ . . . to move the picture right ← . . . to move the picture left
(Vertical Centering)	→ . . . to move the picture up ← . . . to move the picture down
(Horizontal Sizing)	→ . . . to increase picture width ← . . . to decrease picture width
(Vertical Sizing)	→ . . . to increase picture height ← . . . to decrease picture height
(Zoom)	→ . . . to enlarge the picture ← . . . to reduce the picture

Press the ☰ button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

To reset, press the ⇢ (reset) button while the OSD is on. The selected item is reset to the factory setting.

Note

The (Zoom) adjustment stops when the horizontal or vertical size reaches its maximum or minimum value. The horizontal adjustment value is not displayed in the menu.

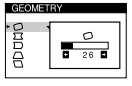
EN

Using the GEOMETRY On-screen Display

The GEOMETRY settings allow you to adjust the shape and orientation of the picture.
Once the (Rotation) is adjusted, it will be stored in memory for all input signals received. All other adjustments will be stored in memory for the current input signal.

1 Press the button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select " GEOMETRY" and press the button again.
The GEOMETRY OSD appears.



3 Press the ↓/↑ buttons to select the item you want to adjust.

Select		To
	(Rotation)	adjust the picture rotation
	(Pincushion)	adjust the picture sides
	(Pin Balance)	adjust the picture side balance
	(Keystone)	adjust the picture width
	(Key Balance)	adjust the picture shape balance

4 Press the ←/→ buttons to adjust the settings.

For		Press
	(Rotation)	→ . . . to rotate the picture clockwise ← . . . to rotate the picture counterclockwise
	(Pincushion)	→ . . . to expand the picture sides ← . . . to contract the picture sides
	(Pin Balance)	→ . . . to expand the picture sides to the right ← . . . to expand the picture sides to the left
	(Keystone)	→ . . . to increase the picture width at the top ← . . . to decrease the picture width at the top
	(Key Balance)	→ . . . to move the top of the picture to the right ← . . . to move the top of the picture to the left

Press the button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

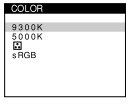
To reset, press the (reset) button while the OSD is on. The selected item is reset to the factory setting.

Using the COLOR On-screen Display

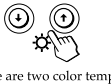
You can change the monitor's color temperature. For example, you can adjust or change the colors of a picture on the screen to match the actual colors of a printed picture. Once the setting is adjusted, it will be stored in memory for all input signals received.

1 Press the button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select " COLOR" and press the button again.
The COLOR OSD appears.

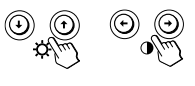


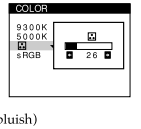
3 Press the ↓/↑ buttons to select the color temperature.



There are two color temperature modes in the OSD. The preset adjustment is 9,300K.

Selecting your own color temperature between 9,300K and 5,000K
Press the ↓/↑ buttons to select " (Variable)" and adjust by pressing the ←/→ buttons.





→ . . . for a higher temperature (bluish)
← . . . for a lower temperature (reddish)

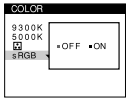
Press the button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

To reset, press the (reset) button while the OSD is on. The selected color temperature is reset to the factory settings.

sRGB Mode

The sRGB color setting is an industry standard color space protocol designed to correlate the displayed and printed colors of sRGB compliant computer products. To adjust the colors to the sRGB profile, simply set the sRGB "ON" in the COLOR menu.
However, in order to display the sRGB colors correctly (γ =2.2, 6500K), you must set your computer to the sRGB profile.
When you set sRGB to "ON" the brightness (☼) and contrast (◑) are automatically set to "31" and "85" respectively. If you change the brightness (☼) and contrast (◑), sRGB setting is changed to "OFF".
For information on how to change the brightness (☼) and contrast (◑), see page 6.

Note
Your computer and other connected products (such as a printer), must be sRGB compliant.



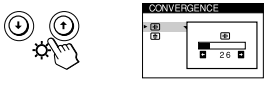
EN

Using the CONVERGENCE On-screen Display

The CONVERGENCE settings allow you to adjust the quality of the picture by controlling the convergence.
The convergence refers to the alignment of the red, green, and blue color signals.
If you see red or blue shadows around letters or lines, adjust the convergence.
Once the setting is adjusted, it will be stored in memory for all input signals received.

1 Press the button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "CONVERGENCE" and press the button again.
The CONVERGENCE OSD appears.



3 Press the ↓/↑ buttons to select the item you want to adjust.

Select	To
(Horizontal Convergence)	adjust the horizontal convergence
(Vertical Convergence)	adjust the vertical convergence

4 Press the ←/→ buttons to adjust the settings.

For	Press
(Horizontal Convergence)	→ . . . to shift red shadows to the right and blue shadows to the left ← . . . to shift red shadows to the left and blue shadows to the right
(Vertical Convergence)	→ . . . to shift red shadows up and blue shadows down ← . . . to shift red shadows down and blue shadows up

Press the button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

To reset, press the (reset) button while the OSD is on. The selected item is reset to the factory setting.

Using the LANGUAGE On-screen Display

English, French, German, Spanish, Italian, Dutch, Swedish, Russian, and Japanese versions of the OSDs are available.

1 Press the button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "LANGUAGE" and press the button again.
The LANGUAGE OSD appears.

3 Press the ↓/↑ buttons to select the desired language.

- ENGLISH
- FRANÇAIS: French
- DEUTSCH: German
- ESPAÑOL: Spanish
- ITALIANO: Italian
- NEDERLANDS: Dutch
- SVENSKA: Swedish
- РУССКИЙ: Russian
- 日本語: Japanese

Press the button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

To reset to English, press the (reset) button while the OSD is on.

Using the OPTION On-screen Display

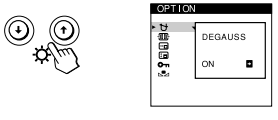
The OPTION OSD allows you to manually degauss the screen, adjust the moire cancellation level, and adjust the OSD position. It also allows you to lock the controls.

Degaussing the screen

The monitor screen is automatically degaussed (demagnetized) when the power is turned on.
You can also manually degauss the monitor.

1 Press the button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "OPTION" and press the button again.
The OPTION OSD appears.



3 Press the ↓/↑ buttons to select "(DEGAUSS)."

4 Press the → button.
The screen is degaussed for about 5 seconds.

If you need to degauss the screen a second time, wait for at least 20 minutes before repeating the steps above.

Press the button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

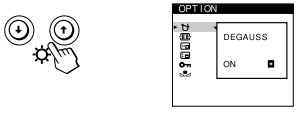
EN

Adjusting the moire

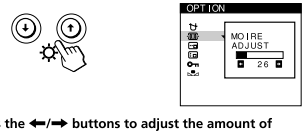
If elliptical or wavy patterns appear on the screen, adjust the moire cancellation level.

1 Press the ⊜ button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "🖶 OPTION" and press the ⊜ button again.
The OPTION OSD appears.



3 Press the ↓/↑ buttons to select "MOIRE* ADJUST."



4 Press the ←/→ buttons to adjust the amount of moire cancellation until the moire effect is at a minimum.

* Moire is a type of natural interference which produces soft, wavy lines on your screen. It may appear due to interference between the pattern of the picture on the screen and the phosphor pitch pattern of the monitor.

Example of moire:

Press the ⊜ button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

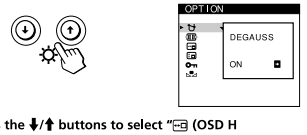
To reset, press the ⇢ (reset) button while the OSD is on.

Changing the on-screen display position

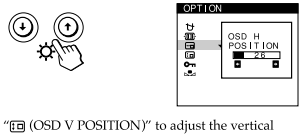
You can change the OSD position (for example, when you want to adjust the picture behind the OSD).

1 Press the ⊜ button.
The MENU OSD appears.

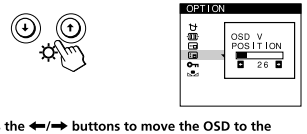
2 Press the ↓/↑ buttons to select "🖶 OPTION" and press the ⊜ button again.
The OPTION OSD appears.



3 Press the ↓/↑ buttons to select "OSD H POSITION)" or "OSD V POSITION)."
Select "OSD H POSITION)" to adjust the horizontal position.



Select "OSD V POSITION)" to adjust the vertical position.



4 Press the ←/→ buttons to move the OSD to the desired position.

Press the ⊜ button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

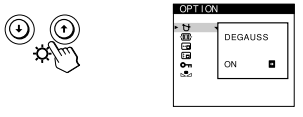
To reset, press the ⇢ (reset) button while the OSD is on.

Locking the controls

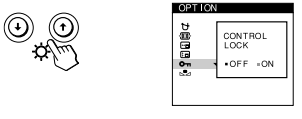
You can protect adjustment data by locking the controls.

1 Press the ⊜ button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "🖶 OPTION" and press the ⊜ button again.
The OPTION OSD appears.



3 Press the ↓/↑ buttons to select "🔑 (CONTROL LOCK)."



4 Press the → button to select "ON."

Press the ⊜ button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

Only the ⏻ (power) switch, EXIT, and "🔑 (CONTROL LOCK)" of the "🖶 OPTION" OSD will operate. If any other items are selected, the 🔑 mark appears on the screen.

To cancel the control lock

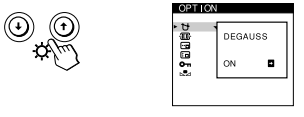
Repeat steps 1 through 3 above and press the ← button to select "OFF."

Restoring the color

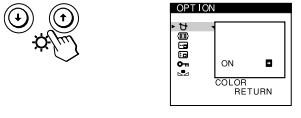
The colors of most display monitors tend to gradually lose brilliance over several years of service. The IMAGE RESTORATION feature allows you to restore the color to the original factory quality levels.

1 Press the ⊜ button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "🖶 OPTION" and press the ⊜ button again.
The OPTION OSD appears.



3 Press the ↓/↑ buttons to select "IMAGE RESTORATION)."



4 Press the → button to select "ON."

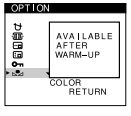
The picture disappears while the color is being restored (about 2 seconds). After the color is restored, the picture reappears on the screen again.

Press the ⊜ button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

EN

Notes

- Before using this feature, the monitor must be in normal operation mode (green power indicator on) for at least 30 minutes. If the monitor goes into power saving mode, you must return the monitor to normal operation mode and wait for 30 minutes for the monitor to be ready.
  You may need to adjust your computer's power saving settings to keep the monitor in normal operation mode for the full 30 minutes. If the monitor is not ready, the following message will appear.



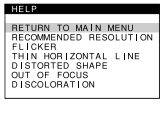
- The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.

Using the HELP ❷ On-screen Display

The HELP OSD contains helpful hints and information about this monitor. If your monitor is displaying symptoms that match those listed in the HELP OSD, follow the on-screen instructions to resolve the problem. If the symptoms do not match those listed in the HELP OSD or if the problem persists, see "Troubleshooting" on page 18.

1 Press the ⊜ button.
The MENU OSD appears.

2 Press the ↓/↑ buttons to select "❷ HELP" and press the ⊜ button again.
The HELP OSD appears.



3 Press the ↓/↑ buttons to select a HELP menu item.
Instructions or information to resolve the problem appears on the screen. An explanation of each menu item is given below.

RECOMMENDED RESOLUTION
If the picture does not fill the screen to the edges or if the picture appears too large for the screen, adjust the resolution to the figures shown in the OSD using your computer. If the input signal matches one of this monitor's factory preset modes, the resolution and refresh rate of the current input signal are displayed.

FLICKER
If the picture is flickering, adjust the refresh rate to figures shown in the OSD. If the input signal matches one of this monitor's factory preset modes, the refresh rate of the current input signal is displayed.

THIN HORIZONTAL LINE
The lines that appear on your screen are damper wires. See page 16 for more information about the damper wires.

DISTORTED SHAPE
If the shape of the picture on the screen seems distorted, try adjusting the picture's geometry. Press the ➡ button to jump directly to the GEOMETRY OSD.

OUT OF FOCUS
The picture may seem to be out of focus when the red and blue color signals are not aligned properly, causing red or blue shadows to appear around letters and lines. Try adjusting the picture's convergence to make the shadows disappear. Press the ➡ button to jump directly to the CONVERGENCE OSD. When the CONVERGENCE OSD is displayed, the contrast, brightness, and moire adjustment settings are automatically reset for all input signals.

DISCOLORATION
If the picture's color appears abnormal in certain areas of the screen, first check for any loose signal cables. After you have checked the cables, try degaussing (demagnetizing) the screen manually. Press the ➡ button to jump directly to the OPTION OSD, then select ☋ (DEGAUSS).

Press the ⊜ button once to return to the MENU OSD, and twice to return to normal viewing. If no buttons are pressed, the OSD closes automatically after about 30 seconds.

Resetting the Adjustments

Resetting an adjustment item

1 Press the ⊜ and ↓/↑ buttons to select the OSD containing the item you want to reset, and press the ⊜ button again.

2 Press the ↓/↑ buttons to select the item you want to reset.

3 Press the ⇢ (reset) button.

Resetting all of the adjustment data for the current input signal

When there is no OSD displayed, press the ⇢ (reset) button.
All of the adjustment data for the current input signal is reset to the factory settings.
Note that resetting the current signal does not affect brightness and contrast, OSD language, OSD position or control lock.

Resetting all of the adjustment data for all input signals

Press and hold the ⇢ (reset) button for more than two seconds.
All of the adjustment data, including the brightness and contrast, is reset to the factory settings.

Note
The ⇢ (reset) button does not function when 🔑 (CONTROL LOCK) is set to ON.

Power Saving Function

This monitor meets the power-saving guidelines set by VESA and ENERGY STAR, as well as the more stringent NUTEK .
If the monitor is connected to a computer or video graphics board that is VESA DPMS (Display Power Management Signaling) compliant, the monitor will automatically reduce power consumption in three stages as shown below.

Notes

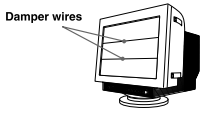
- When your computer is in a power saving mode, MONITOR IS IN POWER SAVE MODE appears on the screen if you press any button on the monitor (page 17). After a few seconds, the monitor enters the power saving mode again. Once the horizontal and vertical sync signals are detected, the monitor automatically resumes its normal operation mode.
- The power management feature is invoked when the computer recognizes that you have not used your mouse or keyboard for a user-definable period of time.
- IBM recommends that you switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

	Power consumption mode	Screen	Horizontal sync signal	Vertical sync signal	Power consumption	Recovery time	⏻ indicator
1	Normal operation	active	present	present	≤ 140 W	—	Green
2	Standby (1st mode)	blank	absent	present	≤ 15 W	Approx. 5 sec.	Green and orange alternate
3	Suspend (2nd mode) (sleep)*	blank	present	absent	≤ 15 W	Approx. 5 sec.	Green and orange alternate
4	Active-off (3rd mode) (deep sleep)*	blank	absent	absent	≤ 3 W	Approx. 15 sec.	Orange
5	Power-off	—	—	—	≤ 0.5 W	—	Off

* "Sleep" and "deep sleep" are power saving modes defined by the Environmental Protection Agency.

Damper Wires

When viewing a white background, very thin horizontal lines may be visible on the screen as shown below. These lines are the shadows of the damper wires and are characteristic of CRTs that use aperture grilles. The wires are attached to the aperture grille on the inside of the Trinitron tube and prevent the vibration of the aperture grille.



Plug & Play

This monitor complies with the DDC1, DDC2B and DDC2Bi Display Data Channel (DDC) standards of VESA.
When a DDC1 host system is connected, the monitor synchronizes with the V. CLK in accordance with the VESA standards and outputs the EDID (Extended Display Identification Data) to the data line.
When a DDC2B or DDC2Bi host system is connected, the monitor automatically switches to the appropriate standard.

Preset Modes

No.	Resolution (dots × lines)	Horizontal Frequency	Vertical Frequency	Graphics Mode
1	640 × 480	31.5 kHz	60 Hz	VGA
2	640 × 480	43.3 kHz	85 Hz	VESA
3	800 × 600	46.9 kHz	75 Hz	VESA
4	800 × 600	53.7 kHz	85 Hz	VESA
5	1024 × 768	60.0 kHz	75 Hz	VESA
6	1024 × 768	68.7 kHz	85 Hz	VESA
7	1280 × 1024	80.0 kHz	75 Hz	VESA
8	1280 × 1024	91.1 kHz	85 Hz	VESA
9	1600 × 1200	93.8 kHz	75 Hz	VESA
10	1600 × 1200	106.3 kHz	85 Hz	VESA

Displaying the Monitor's Information

You can display the model name, serial number and year of manufacture using the monitor's INFORMATION OSD.

Press and hold the ⊜ button for 3 seconds.
The INFORMATION OSD appears.

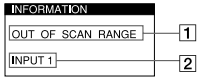
Example:

The INFORMATION OSD includes the model name, serial number, and manufactured year.

The OSD automatically disappears after about 30 seconds.

Warning Messages

If no pictures appears on the screen, one of the following messages appears on the screen. To solve the problem, see "Troubleshooting" on page 18.



1 The input signal condition
OUT OF SCAN RANGE
indicates that the input signal is not supported by the monitor's specifications.
NO INPUT SIGNAL
indicates that no signal is input.
MONITOR IS IN POWER SAVE MODE
indicates that the computer is in power saving mode. Thes message is displayed only when your computer is in a power saving mode and you press any one of the buttons on the monitor.

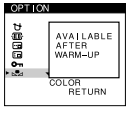
2 The selected connector
This message shows the currently selected connector (INPUT 1 or INPUT 2).

EN

Troubleshooting

This section may help you isolate the cause of a problem and as a result, eliminate the need to contact technical support.

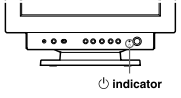
Symptom	Check these items
No picture	
If the ⏻ indicator is not lit	• Check that the power cord is properly connected. • Check that the ⏻ (power) switch is in the "on" position.
If the "NO INPUT SIGNAL" message appears on the screen, or if the ⏻ indicator is either orange or alternating between green and orange	• Check that your computer power switch is in the "on" position. • Check that the Input 1-2 switch settin is correct (page 5). • Check that the video signal cable is properly connected and all plugs are firmly seated in their sockets. • Ensure that no pins are bent or pushed in the video input connector. • Check that the graphic board is completely seated in the proper bus slot.
If the "MONITOR IS IN POWER SAVE MODE" message appears on the screen, or if the ⏻ indicator is either orange or alternating between green and orange	• The computer is in power saving mode. Try pressing any key on the computer keyboard, or moving the mouse. • Check that your computer power switch is in the "on" position. • Check that the graphic board is completely seated in the proper bus slot.
If the "OUT OF SCAN RANGE" message appears on the screen	• Check that the video frequency range is within that specified for the monitor. (Horizontal: 30 – 107kHz, Vertical: 48 – 120 Hz) Refer to your computer's instruction manual to adjust the video frequency range. • If you are using a video signal cable adapter, check that it is the correct one.
If no message is displayed and the ⏻ indicator is green or flashing orange	• See "Self-diagnosis Function" (page 20).
Picture is scrambled	• Check your graphics board manual for the proper monitor setting. • Check this manual and confirm that the graphics mode and the frequency you are trying to operate at is supported. Even if the frequency is within the proper range, some graphic boards may have a sync pulse that is too narrow for the monitor to sync correctly.
Color is not uniform	• Degauss the monitor (page 11). If you place equipment which generates a magnetic field, such as a loudspeaker, near the monitor, or you change the direction of the monitor, color may lose uniformity. The degauss function demagnetizes the metal frame of the CRT to obtain a neutral field for uniform color reproduction. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result.
You cannot adjust the monitor with the buttons on the front panel (🔑 appears on the screen)	• If the control lock function is set to ON, set it to OFF using the OPTION OSD (page 13).
White does not look white	• Adjust the color temperature (page 9).

Symptom	Check these items
Screen image is not centered or sized properly	• Press ⊡ button (page 5). • Adjust the size or centering (page 7). Some video modes do not fill the screen to the edges. This problem tends to occur with certain graphic boards.
Edges of the image are curved	• Adjust the geometry (page 8).
White lines show red or blue shadows at edges	• Adjust the convergence (page 10).
Picture is fuzzy	• Adjust the contrast and brightness (page 6). • Degauss the monitor (page 11). If you place equipment which generates a magnetic field, such as a loudspeaker, near the monitor, or you change the direction of the monitor, color may lose uniformity. The degauss function demagnetizes the metal frame of the CRT to obtain a neutral field for uniform color reproduction. If a second degauss cycle is needed, allow a minimum interval of 20 minutes for the best result. • If red or blue shadows appear along the edges of images, adjust the convergence (page 10). • Select MOIRE ADJUST and adjust the moire cancellation effect (page 12).
Picture bounces or has wavy oscillations	• Isolate and eliminate any potential sources of electric or magnetic fields. Common causes for this symptom are electric fans, fluorescent lighting, or laser printers. • If you have another monitor close to this monitor, increase the distance between them to reduce the interference. • Try plugging the monitor into a different AC outlet, preferably on a different circuit. • Try the monitor on a different computer in a different room.
Picture is flickering	• Set the refresh rate on the computer to obtain the best possible picture by referring to your computer's manual.
Picture appears to be ghosting	• Eliminate the use of video cable extensions and/or video switch boxes if this symptom occurs. Excessive cable length or a weak connection can produce this symptom.
Wavy or elliptical (moire) pattern is visible	• Select MOIRE ADJUST and adjust the moire cancellation effect (page 12). The moire may be modified depending on the connected computer. • Change your desktop pattern. Due to the relationship between resolution, monitor dot pitch and the pitch of some image patterns, certain screen backgrounds sometimes show moire.
Two fine horizontal lines (wires) are visible	• These wires stabilize the vertically striped aperture grille (page 16). This aperture grille allows more light to pass through to the screen giving the Trinitron CRT more color and brightness.
IMAGE RESTORATION function does not operate 	• Before using this function, the monitor must be in normal operation mode (green power indicator on) for at least 30 minutes. For more information on using the IMAGE RESTORATION function, see "Restoring the color" on page 13. • Adjust the computer's power saving settings to keep the monitor in normal operation mode for more than 30 minutes. • The monitor may gradually lose its ability to perform this function due to the natural aging of the picture tube.
Hum is heard right after the power is turned on	• When the power is turned on, the auto-degauss cycle is activated. While the auto-degauss cycle is activated, a hum may be heard. The same hum is heard when the monitor is manually degaussed. This is not a malfunction.

- If the problem persists, call the IBM HelpCenter.
- Note the model name and the serial number of your monitor. Also note the make and name of your computer and graphic board.

Self-diagnosis Function

This monitor is equipped with a self-diagnosis function. If there is a problem with your monitor or computer, the screen will go blank and the ⏻ indicator will either light up green or flash orange.



If the ⏻ indicator is green

1 **Disconnect the video input cable or turn off the connected computer.**

2 **Press the ⏻ button twice to turn the monitor off and then on.**

3 **Press and hold the ➡ button for 2 seconds before the monitor enters power saving mode.**

If all four color bars appear (white, red, green, blue), the monitor is working properly. Reconnect the video input cable and check the condition of your computer.

If the color bars do not appear, there is a potential monitor failure. Inform the IBM HelpCenter of the monitor's condition.

If the ⏻ indicator is flashing orange

Press the ⏻ button twice to turn the monitor off and then on.

If the ⏻ indicator lights up green, the monitor is working properly.

If the ⏻ indicator is still flashing, there is a potential monitor failure. Inform the IBM HelpCenter of the monitor's condition. Be sure to note the model name and serial number of your monitor. Also note the make and model of your computer and video board.

Specifications

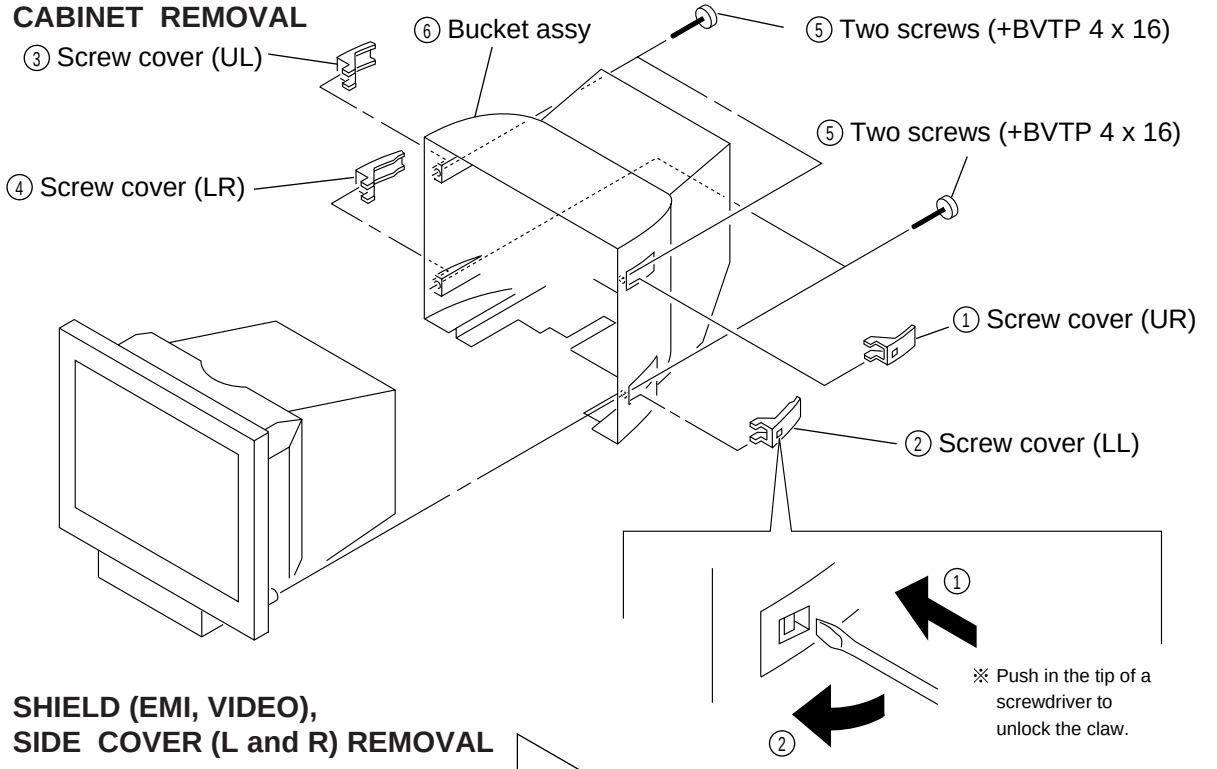
Picture tube	0.24 mm aperture grille pitch 19 inches measured diagonally 90-degree deflection
Viewable image size	Approx. 365 × 274 mm (w/h) (14 3/8 × 10 7/8 inches) 18.0″ viewable diagonal
Resolution	Horizontal: Max. 1600 dots Vertical: Max. 1200 lines
Standard image area	Approx. 352 × 264 mm (w/h) (13 7/8 × 10 1/2 inches)
Deflection frequency*	Horizontal: 30 to 107kHz Vertical: 48 to 120 Hz 256 < Total Line < 2048
AC input voltage/current	220 to 240 V, 50 – 60 Hz, Max. 1.0 A
Power consumption	Max. 140 W
Operating temperature	10°C to 40°C
Dimensions	Approx. 462 × 462 × 474 mm (w/h/d) (18 1/4 × 18 1/4 × 18 3/4 inches)
Mass	Approx. 27 kg (59 lb 8 oz)

* Recommended horizontal and vertical timing condition
- Horizontal sync width should be more than 1.0 μsec.
- Horizontal blanking width should be more than 3.0 μsec.
- Vertical blanking width should be more than 450 μsec.

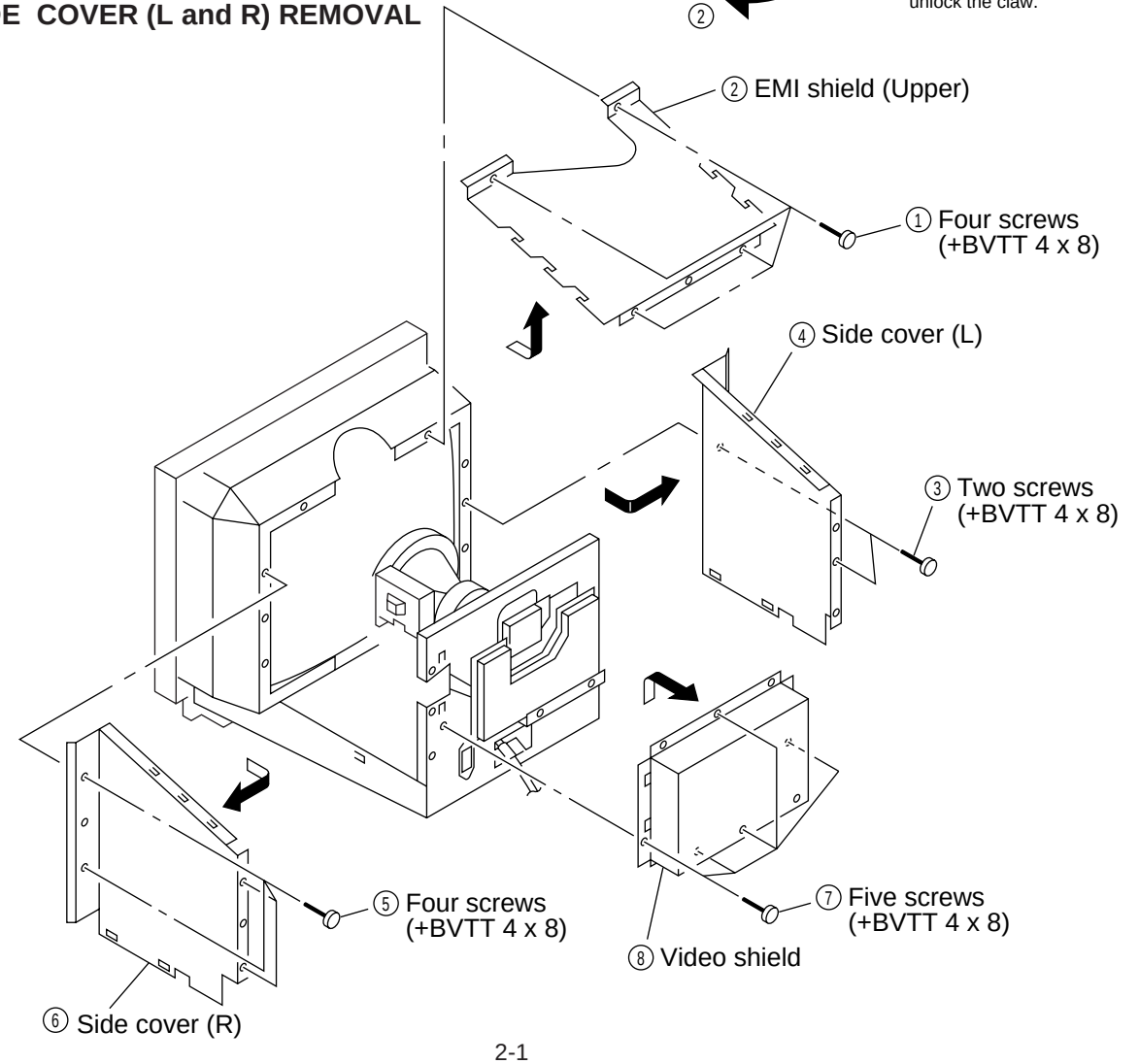
Design and specifications are subject to change without notice.

SECTION 2
DISASSEMBLY

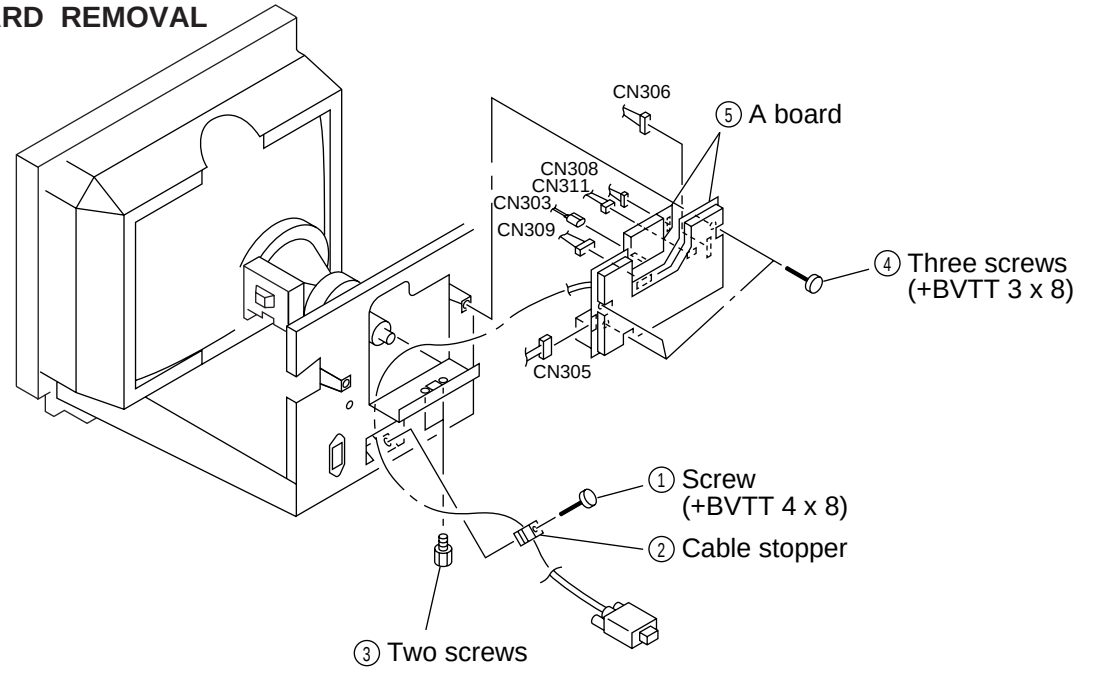
2-1. CABINET REMOVAL


③ Screw cover (UL)
⑥ Bucket assy
⑤ Two screws (+BVTP 4 x 16)
⑤ Two screws (+BVTP 4 x 16)
④ Screw cover (LR)
① Screw cover (UR)
② Screw cover (LL)
①
②
※ Push in the tip of a screwdriver to unlock the claw.

2-2. SHIELD (EMI, VIDEO), SIDE COVER (L and R) REMOVAL

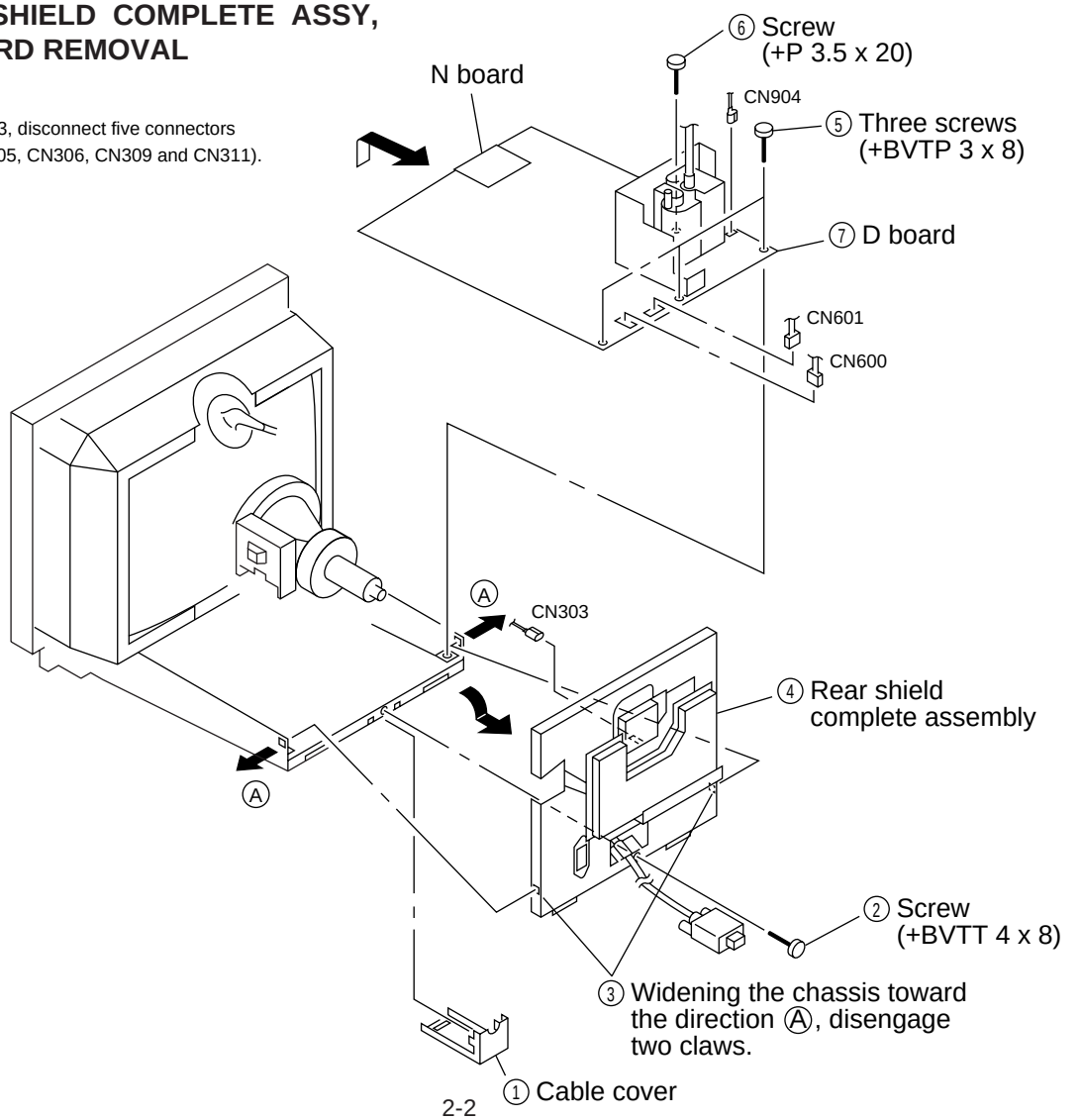

② EMI shield (Upper)
① Four screws (+BVTT 4 x 8)
④ Side cover (L)
③ Two screws (+BVTT 4 x 8)
⑤ Four screws (+BVTT 4 x 8)
⑦ Five screws (+BVTT 4 x 8)
⑧ Video shield
⑥ Side cover (R)

2-3. A BOARD REMOVAL

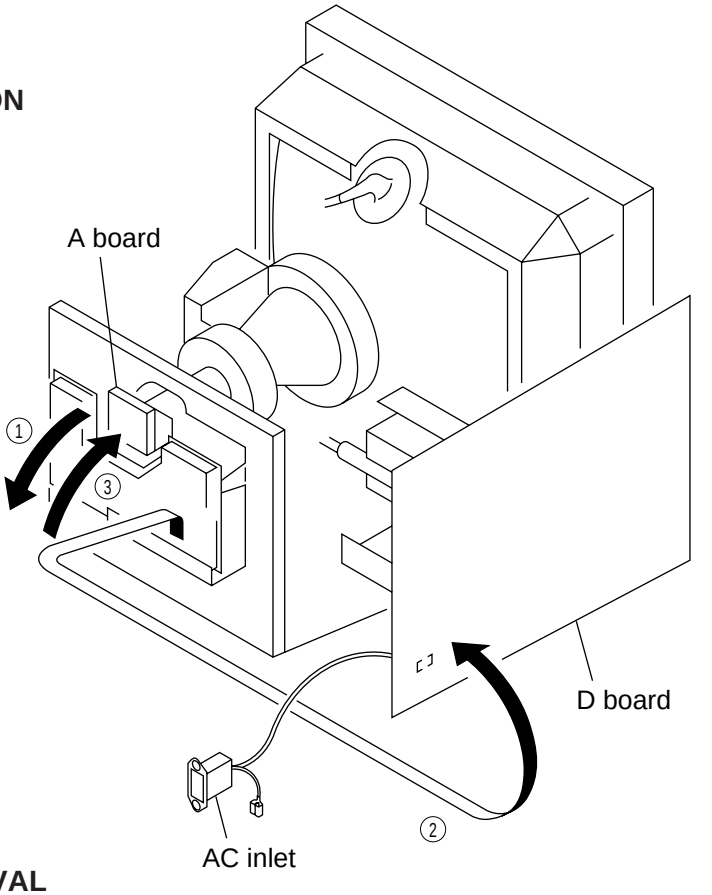


2-4. REAR SHIELD COMPLETE ASSY, D BOARD REMOVAL

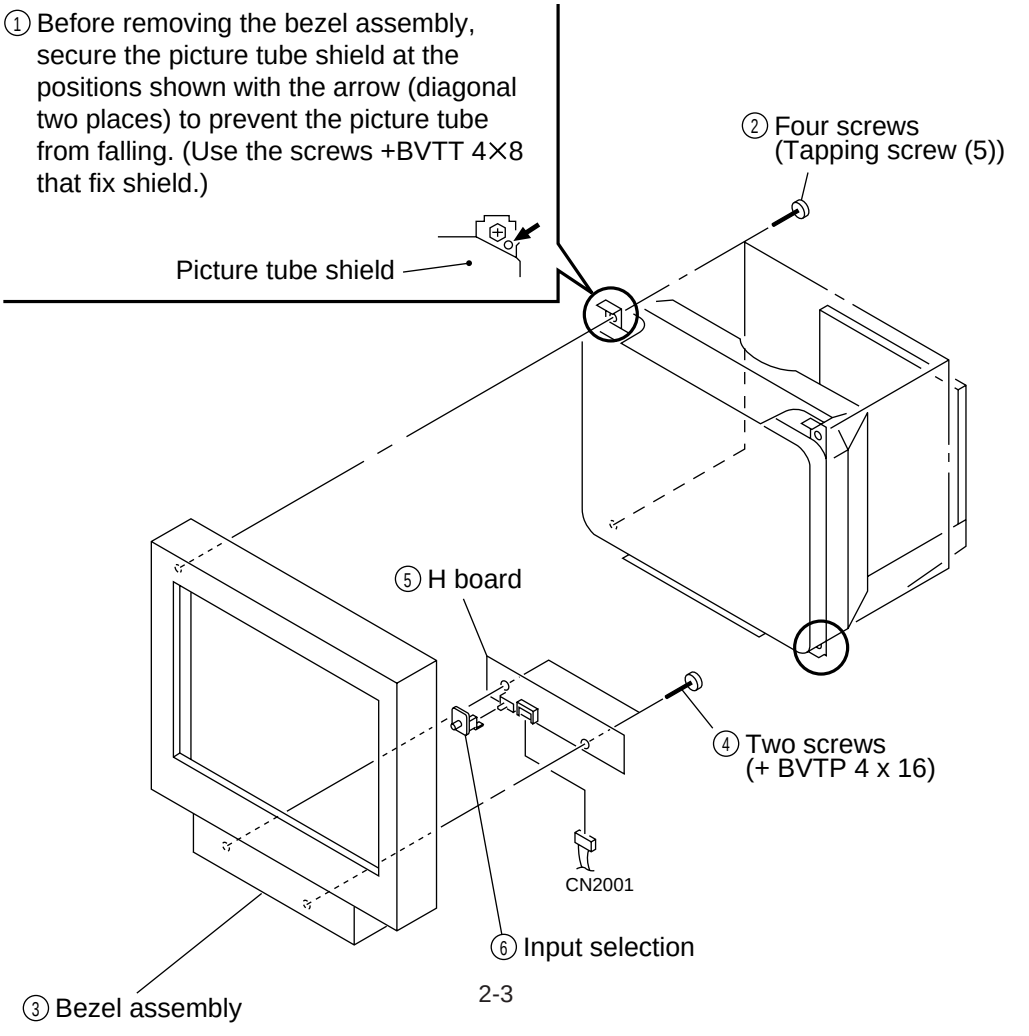
※ Refering to 2-3, disconnect five connectors (CN303, CN305, CN306, CN309 and CN311).



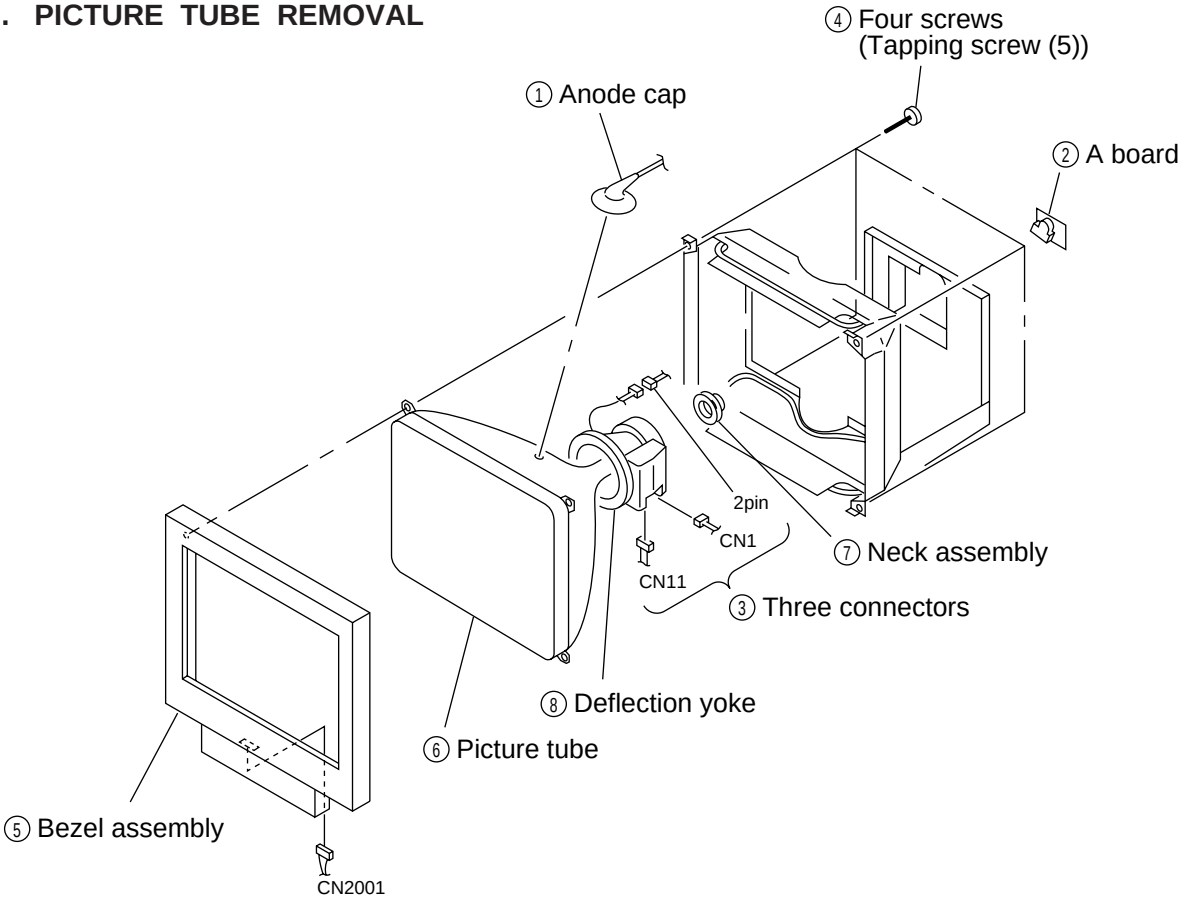
2-5. SERVICE POSITION



2-6. H BOARD REMOVAL


① Before removing the bezel assembly, secure the picture tube shield at the positions shown with the arrow (diagonal two places) to prevent the picture tube from falling. (Use the screws +BVTT 4×8 that fix shield.)
② Four screws (Tapping screw (5))
Picture tube shield
⑤ H board
④ Two screws (+ BVTP 4 x 16)
CN2001
⑥ Input selection
③ Bezel assembly

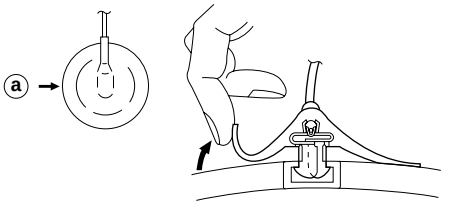
2-7. PICTURE TUBE REMOVAL



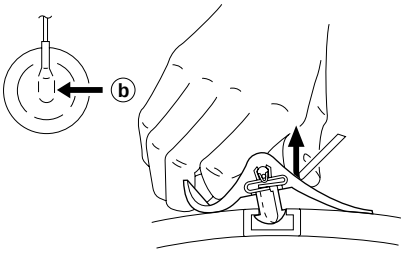
• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon painted on the CRT, after removing the anode.

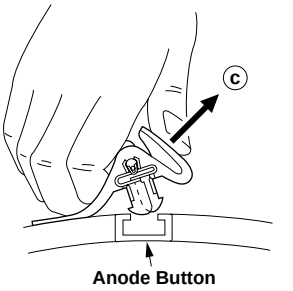
• REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



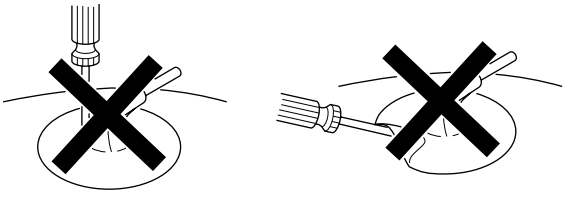
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

• HOW TO HANDLE AN ANODE-CAP

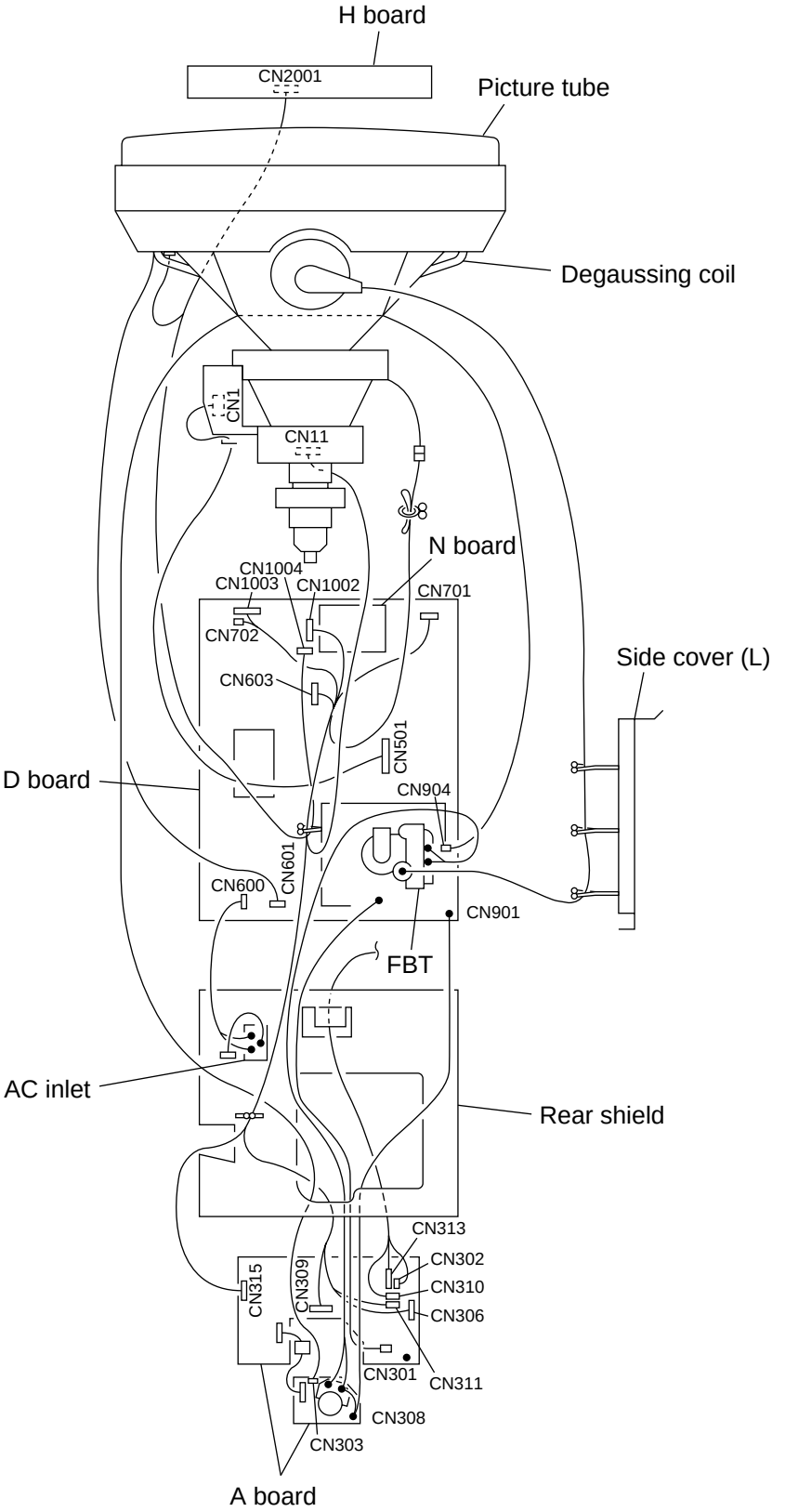
① Don't scratch the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to damage inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly!
The shatter-hook terminal will stick out or damage the rubber.



2-8. HARNESS LOCATION



SECTION 3
SAFETY RELATED ADJUSTMENT

When replacing or repairing the shown below table, the following operational checks must be performed as a safety precaution against X-rays emissions from the unit.

	Part Replaced (⋈)
HV ADJ	RV901

	Part Replaced (◪)	
HV Regulator Circuit Check	D Board	T901(FBT), IC901, R924, R925, RV901 • Mounted D board
HV Protector Circuit Check	D Board	T901(FBT), R917, R918, R923, R920, R919, R1004, C920, D911, R912, • Mounted D board
Beam Current Protector Circuit Check	D Board	R933, R932, R921, R1006, D915, D917, IC901, T901(FBT) • Mounted D board

* Confirm one minute after turning on the power.

a) High Voltage Adjustment

1) Adjust the high voltage 27.0 kV ± 0.2 kV by the RV901.

Note:Perform high voltage adjustment after the rough adjustments were completed on PICTURE size and FOCUS.

b) High Voltage Hold-Down Function Check

1) Apply the voltage $21.1^{+0.00}_{-0.05}$ VDC between D912 cathode and GND shown on the right to confirm that the RASTER will vanish.

c) Beam Current Protector Function Check

1) Connect Power Supply 1.68 mA to between pin 11 ~ GND of FBT (T901).
2) Confirm that voltage on C922 (ABL DET.) is less than 2.25 V or monitor will shut down.

d) OCP Function Check

1) Turn ON Power Supply.
2) Connect 3 Z/20 W of Resistor between +200 V Line and GND, and make sure that OCP will function (Power LED will vanish and the sound “chi,chi,chi will be heard.), and cut-off AC input promptly.

e) Power Supply Operation Check

1) Apply AC100 V to the D Board.
2) Make sure that the line voltage at the both ends of C621 is 200 ± 3.0 VDC.

SECTION 4
ADJUSTMENTS

• Landing Rough Adjustment

1. Enter the full white signal. (or the full black dots signal).
2. Adjust the contrast to the maximum.
3. Make the screen monogreen.

Note: Off the outputs from R ch and B ch of SG.

4. Reverse the DY, and adjust coarsely the purity magnet so that a green raster positions in the center of screen.
5. Moving the DY forward, adjust so that an entire screen becomes monogreen.
6. Adjust the tilt of DY. For the TILT component, use TLV of DY.

Note: Observe the following adjustment conditions:
"TILT" = 0
"VPIN SAW TOP" = 0
"VPIN SAW BTM" = 0

7. Lock the DY lightly with a locking fitting.

• Landing Fine Adjustment

<Landing adjustment conditions>

a) Brightness: 1/3 $\sum$ IK ($\sum$ IK = 750 μA)
b) Aging time: 2 hours or more.
c) Atmospheric temperature: 25 °C
d) magnetic Field:
BH = 0 ± 2 μT
BV = 45 ± 2 μT (U/C, AEP)
–55 ± 2 μT (South Hemisphere)
–10 ± 2 μT (Equator destination)
e) Adjustment point:
1-inch inside from the edge of CRT effective tube surface.

1. Put the set inside the Helmholtz coil.
2. Set the TLH plate to "0" position.
3. Set the purity magnet of Neck Assy in "0" position, and lock with a white pen.
4. Set "VPIN SAW TOP" and "VPIN SAW BTM" to "0" position.
5. Receive an image of the monogreen signal.
6. Degauss the CRT and iron shield parts.

Note: Iron bottom chassis and EMI shield should be degaussed before assembling the chassis.

7. Perform auto degaussing.
8. Attach the wobbling coil to the designated part of the CRT neck.
9. Attach the sensor of the landing adjustment unit on the CRT surface.
10. Adjust the DY position and purity, and the DY tilt.

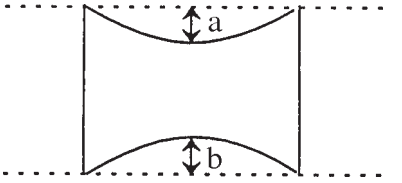
Note: Use purity magnet on the DY.

11. Fasten DY with screw.

Note: Torque 22 ± 2 kg•cm (2.2 ± 0.2 Nm).

12. Perform auto degaussing.
13. Using two wedges, adjust vertical pins so as to attain a=b as shown below. Further, insert two wedges as shown in the right figure, and lock the center so that DY does not fluctuate horizontally.

Note: Insert wedges completely so that the DY does not move.



14. If the corner landing is out of the specification, use the landing magnet so as to satisfy the specification.
<Specification>
a) Green

x ± 4	x ± 7.5	x ± 4	
x ± 4	x ± 7.5	x ± 4	
x ± 4	x ± 7.5	x ± 4	

[X] is bias value for a difference caused depending on whether the EMI shield and rear cover are present or not.
J Models : x = 1.5 [μm]
b) Difference between Green and Red, and between Green and Blue.

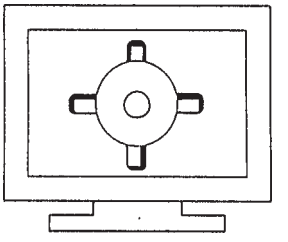
± 5	± 5	± 5	
± 5	± 5	± 5	
± 5	± 5	± 5	[μm]

c) Difference Red and Blue.

± 8	± 8	± 8	
± 8	± 7	± 8	
± 8	± 8	± 8	[μm]

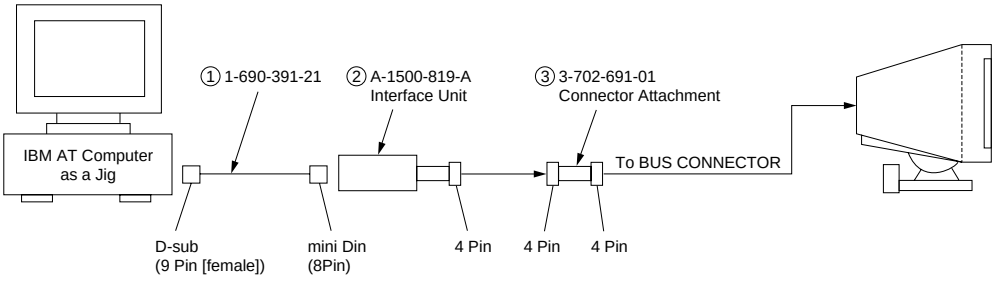
Note:
(1) Do not paste more than two magnets on one corner.
(2) Magnets will be placed in a range of 80 ~ 120 mm from the DY along the diagonal lines.

15. After placing magnets, absolutely degauss and check the results.
16. Remove the sensor and wobbling coil.
17. Check that the DY is not tilting, and fix the purity Mg with a white pen.
<RTV and wedge position>
(1) Apply RTV to the shaded portions.
(2) Lock CRT, wedges, and DY with RTV.



[Rear view]

Connect the communication cable of the computer to the connector located on the D board on the monitor. Run the service software and then follow the instruction.



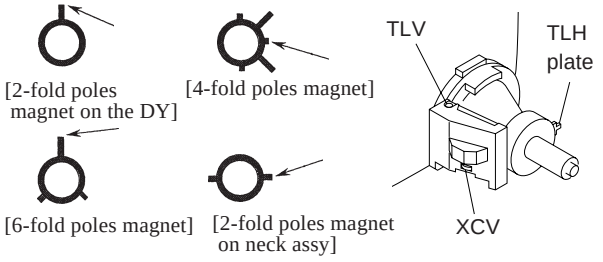
*The parts above (① ~ ③) are necessary for DAS adjustment.

- **Convergence Rough Adjustment**

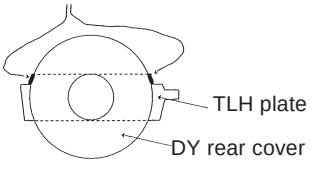
(1) Receive an image of the white crosshatch signals (white lines on black).
(2) Make rough adjustment of the H and V direction convergence by using 4-fold poles magnet.
(3) Make rough adjustment of the HMC and VMC by using 6-fold poles magnet.

<"0" position of each magnet and TLH plate>

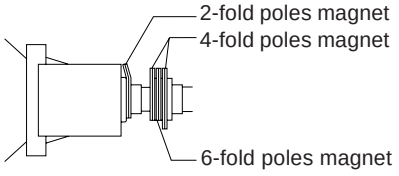
a) Align the protrusion marked with an arrow.

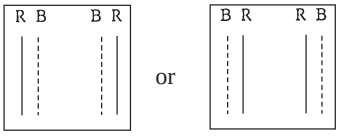


b) Flush the shaded portions of TLH plate with the DY rear cover, as shown below.

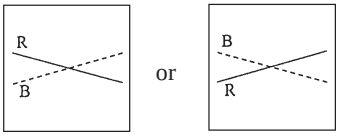


[Rear view]



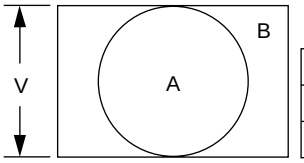


[Movements of TLH plate]



[Movements of XCV volume]

- **Convergence Specification**

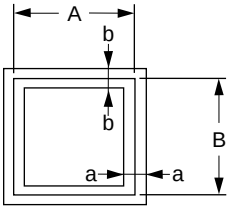


MODE	All mode
A	0.20 mm
B	0.24 mm

- **White Balance Adjustment Specification**

1. 9300 K
   x = 0.283 ± 0.005
   y = 0.298 ± 0.005
   (All White)
2. 5000 K
   x = 0.346 ± 0.005
   y = 0.359 ± 0.005
   (All White)
3. sRGB
   x = 0.313 ± 0.005
   y = 0.329 ± 0.005
   (All White)

- **Vertical and Horizontal Position and Size Specification**

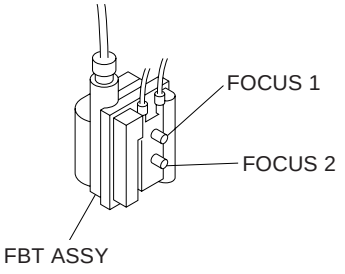


a ≦ 2.0 mm
b ≦ 2.0 mm

MODE	1 ~ 6, 9, 10 MODE	7, 8 MODE
A	352 mm	330 mm
B	264 mm	264 mm

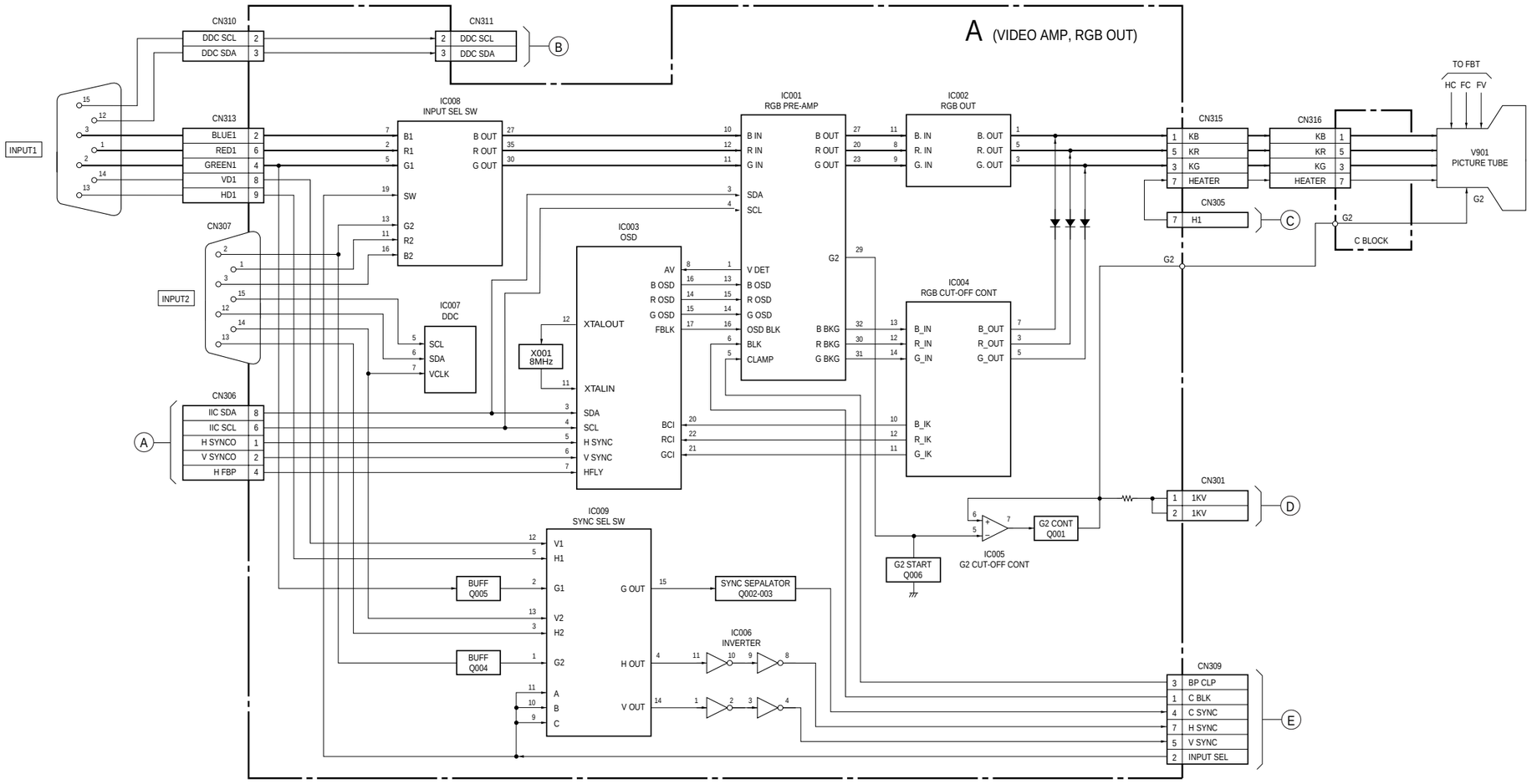
- **Focus adjustment**

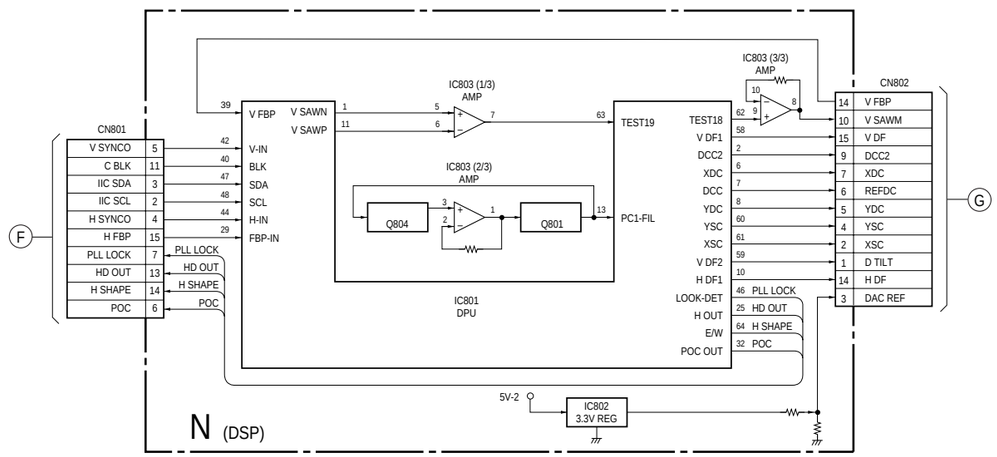
Adjust the focus volume 1 and 2 for the optimum focus.

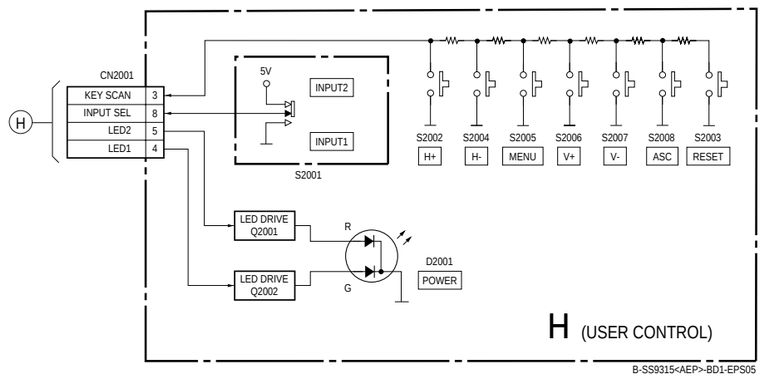


SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAMS







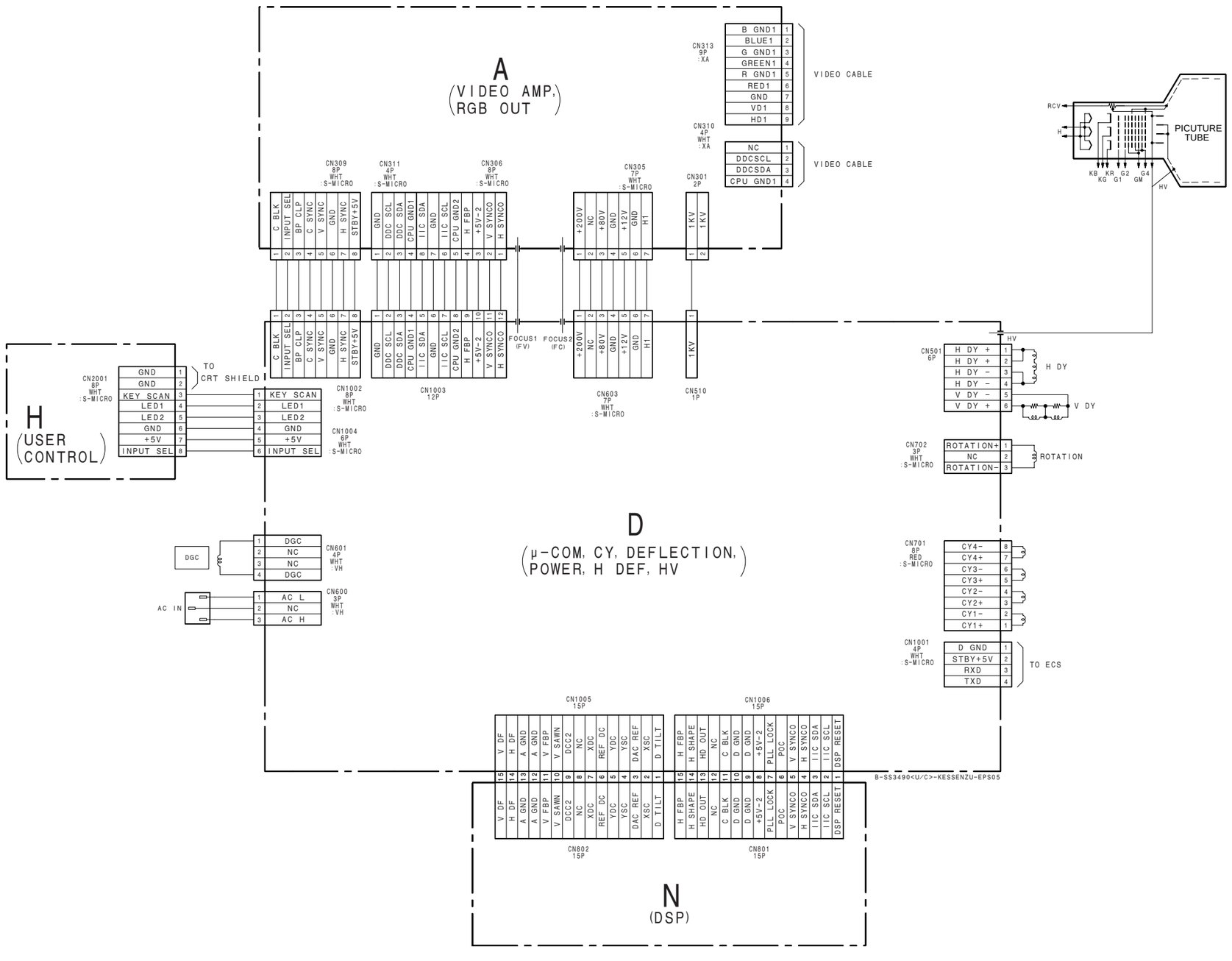
B-SS9315<AEP>-BD1-EPS05

D (μ-COM, CY, DEFLECTION , POWER, H DEF, HV)

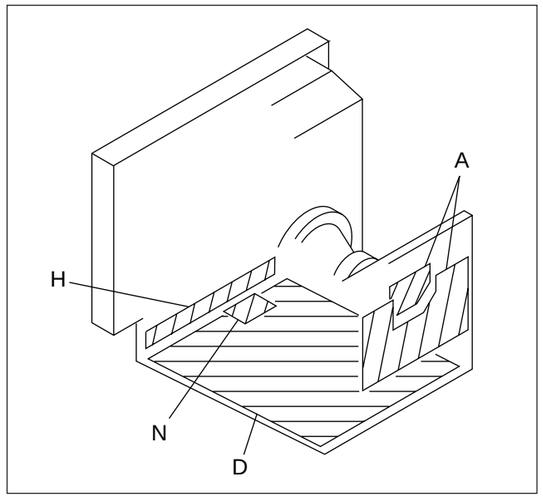
AC IN
CN600 AC L 1 / NC 2 / AC H 3
F601
LF602 :LFT
D625 AC RECT
L601
TH600
RY602
DGC
CN610 DGC 1 / DGC 4
TH601
RY601
RELAY DRIVE Q608
RELAY DRIVE Q607
15V
T602 :SRT
IC603 SW REG CONT (V IN, V CTRL, I SENSE, OOB, DRIVER)
S602
BOOST SW Q605
200V
IC604 12V REG
12V
IC605 5V-2REG
5V-2
D616
SW Q606
IC610 HEATER REG (VCC, CTL, OUT)
IC607
IC609 5V REG
STBY 5V
IC608 SHUNT REG
STBY ERROR AMP Q609
IC502 H CENT AMP (VCC, VEE, OUT)
H CENT Q517, 519
IC901 HV CONT (Width, H SAW GEN)
IC401 V OUT
CN1005 V SAWN 10 / DCC2 9 / V FBP 11 / H DF 14 / V DF 15 / XDC 7 / REF DC 6 / YDC 5 / YSC 4 / DAC REF 3 / XSC 2 / D TILT 1
H DF OUT Q701-705
T701 :DFT
IC503 (1/2) AMP
V DF OUT Q706
DAC REF
BUFF Q507
L503 :HCC
HV REG SW Q901
HV DRIVE Q903-904
HV OUT Q902
T902 :HRC
T901 :FBT
TO PICTURE TUBE HV
TO PICTURE TUBE FV
TO PICTURE TUBE FC
CN1006 H FBP 15 / H SHAPE 14 / HD OUT 13 / DSP RESET 1 / PLL LOCK 7 / POC 6 / IIC SCL 2 / IIC SDA 3 / H SYNCO 4 / V SYNCO 5 / C BLK 11
IC1001 CPU (PWM2, P3.4, AIN6, WDIN, INT3, P9.0, AIN4, AIN5, P9.1, SCLI, SDAI, H SYNCO, V SYNCO, HFBACK, SCLD, SDAD, WDOUT, OSCONT, OSCIN, P3.0, P8.1, P8.0, P3.1, P3.2, P3.3, PWM5, PWM3, PWMN0, PWM3, SOUT, SIN, RESET, PWM6, AIN3, P8.6, P8.7)
IC1005 ROM (SCL, SDA, WC)
CN1003 IIC SCL 7 / IIC SDA 5 / H SYNCO 12 / V SYNCO 11 / H FBP 9 / DDC SCL 2 / DDC SDA 3
CN1002 C BLK 1 / BP CLP 3 / C SYNC 4 / H SYNC 7 / V SYNC 5 / INPUT SEL 2
CN1004 INPUT SEL 6 / KEY SCAN 1 / LED1 2 / LED2 3
CN1001 TXD 4 / RXD 3 — TO ECS
STBY 5V
IC1003 RESET SW
H DRIVE BUFF Q501-503
H DRIVE Q504
T501 :HDT
H OUT Q505
300V
IC503 (2/2) AMP
X1001 8MHz
S CAP CANGE Q511-516
T504 :HST
L502 :HLC
T503 :LCT
IC501 PWN CONT (H SAW GEN, REF 9V)
15V
12V
H LIN BAL SW Q510
IC703 ROTATION DRIVE
200V
PIN OUT Q506
PIN DRIVE Q508-509
T502 :HOC
IC701 CY AMP (INA–, INA+, INB–, INB+, IOUTA, OUTA, OUTB, IOUTB)
IC702 CY AMP (–INA (X), +INA (X), +INB (Y), –INB (Y), STBY, OUTA (X), OUTB (Y))
XSC / DAC REF / YSC / XDC / REF DC / YDC
CN603 3 80V / 7 H1 — C
CN701 8 CY4– / 7 CY4+ / 6 CY3– / 5 CY3+ / 4 CY2– / 3 CY2+ / 2 CY1– / 1 CY1+
CN510 1 1KV — D
CN501 6 V DY+ / 5 V DY– / 4 H DY– / 3 H DY– / 2 H DY+ / 1 H DY+
V DY
H DY
CN702 1 ROTATION+ / 3 ROTATION– — ROTATION

B-SS9315<AEP>-BD2-EPS05

5-2. FRAME SCHEMATIC DIAGRAM



5-3. CIRCUIT BOARDS LOCATION



5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note:

- All capacitors are in µF unless otherwise noted. (pF: µµF) Capacitors without voltage indication are all 50 V.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4 W (CHIP : 1/10 W)

- All resistors are in ohms.
- : nonflammable resistor.
- : fusible resistor.
- △ : internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth-ground.
- : earth-chassis.
- The components identified by ⋈ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. (See page 3-1)
- When replacing the part in below table, be sure to perform the related adjustment.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- All voltages are in V.
- Readings are taken with a 10 M digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- ∗ : Can not be measured.
- Circled numbers are waveform references.
- : B + bus.
- : B – bus.

- Divided circuit diagram

  One sheet of D board circuit diagram is divided into three sheets, each having the code D-ⓐ to D-ⓒ. For example, the destination ab1 on the code D-ⓐ sheet is connected to ab1 on the D-ⓑ sheet.

  a b 1
  Ref. No.
  Circuit diagram division code

	Part Replaced (⋈)
HV ADJ	RV901

	Part Replaced (◪)	
HV Regulator Circuit Check	D Board	T901 (FBT), IC901, R924, R925, RV901 • Mounted D board
HV Protector Circuit Check	D Board	T901 (FBT), R917, R918, R923, R920, R919, R1004, C920, D911, D912 • Mounted D board
Beam Current Protector Circuit Check	D Board	R933, R932, R921, R1006, D915, D917, IC901, T901 (FBT) • Mounted D board

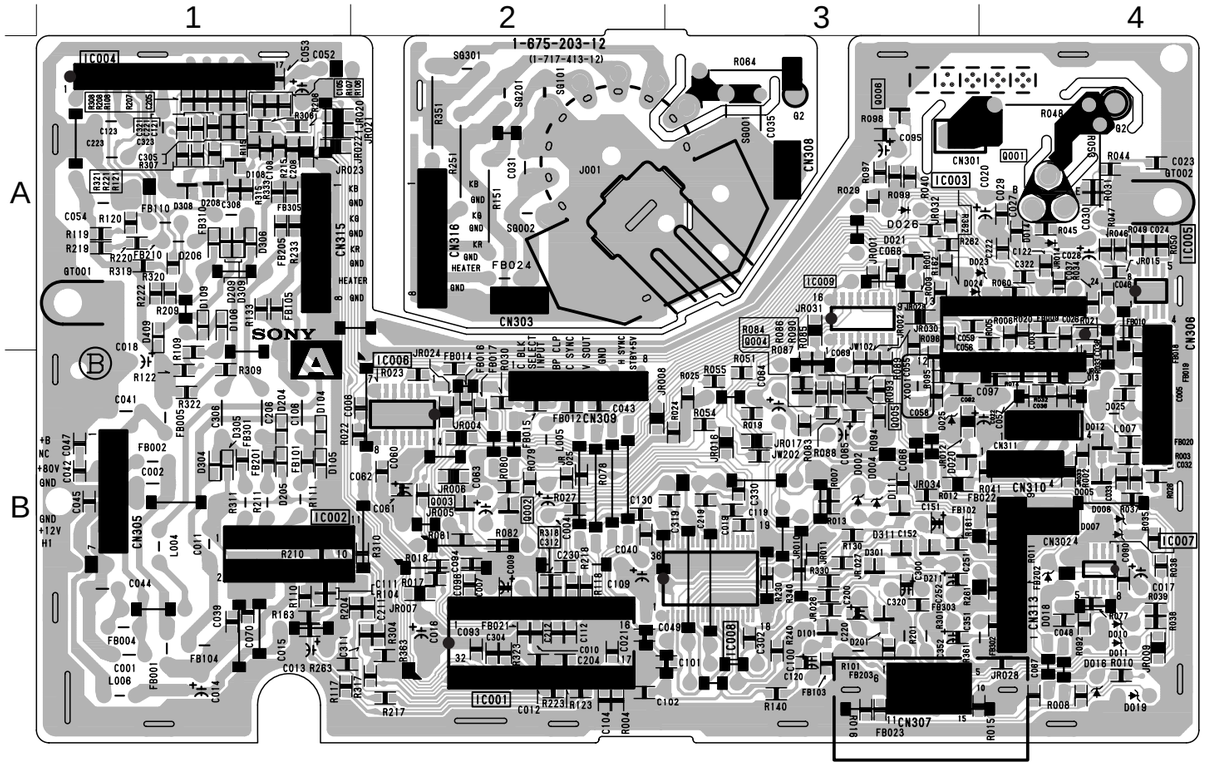
Terminal name of semiconductors in silk screen printed circuit (∗)

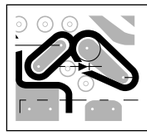
	Device	Printed symbol	Terminal name	Circuit
①	Transistor	T	Collector / Base / Emitter	
②	Transistor	—	Collector / Base / Emitter	
③	Diode		Cathode / Anode	
④	Diode	T	Cathode / Anode (NC)	
⑤	Diode	—	Cathode / Anode (NC)	
⑥	Diode	T	Common / Anode / Cathode	
⑦	Diode	—	Common / Anode / Cathode	
⑧	Diode	T	Common / Anode / Anode	
⑨	Diode	—	Common / Anode / Anode	
⑩	Diode	T	Common / Cathode / Cathode	
⑪	Diode	—	Common / Cathode / Cathode	
⑫	Diode		Anode Anode Cathode / Cathode Anode Anode	
⑬	Transistor (FET)		Drain / Source / Gate	
⑭	Transistor (FET)		Drain / Source / Gate	
⑮	Transistor (FET)		□ Source □ Drain □ Gate	
⑯	Transistor		□ Emitter □ Collector □ Base	
–	Discrete semiconductot			

(Chip semiconductors that are not actually used are included.)

Ver.1.5

— A BOARD —





NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

• A BOARD SEMICONDUCTOR LOCATION

IC		
IC001	B-2	
IC002	B-1	
IC003	A-4	
IC004	A-1	
IC005	A-4	
IC006	B-2	
IC007	B-4	
IC008	B-3	
IC009	A-3	

TRANSISTOR		
		∗
Q001	A-4	–
Q002	B-2	①
Q003	B-2	①
Q004	B-3	①
Q005	B-3	①
Q006	A-3	①

DIODE		
		∗
D002	B-3	–
D004	B-3	–
D005	B-4	⑦
D007	B-4	–
D008	B-4	–
D010	B-4	–
D011	B-4	–
D012	B-4	⑦
D014	A-4	–
D016	B-4	–
D019	B-4	–
D023	A-3	–
D024	A-3	–
D025	B-3	–
D101	B-3	⑦
D104	B-1	③
D105	B-1	③
D106	A-1	③
D108	A-1	⑦
D111	B-3	⑦
D201	B-3	⑦
D204	B-1	③
D205	B-1	③
D206	A-1	③
D208	A-1	⑦
D211	B-3	⑦
D301	B-3	⑦
D304	B-1	③
D305	B-1	③
D306	A-1	③
D308	A-1	⑦
D311	B-3	⑦

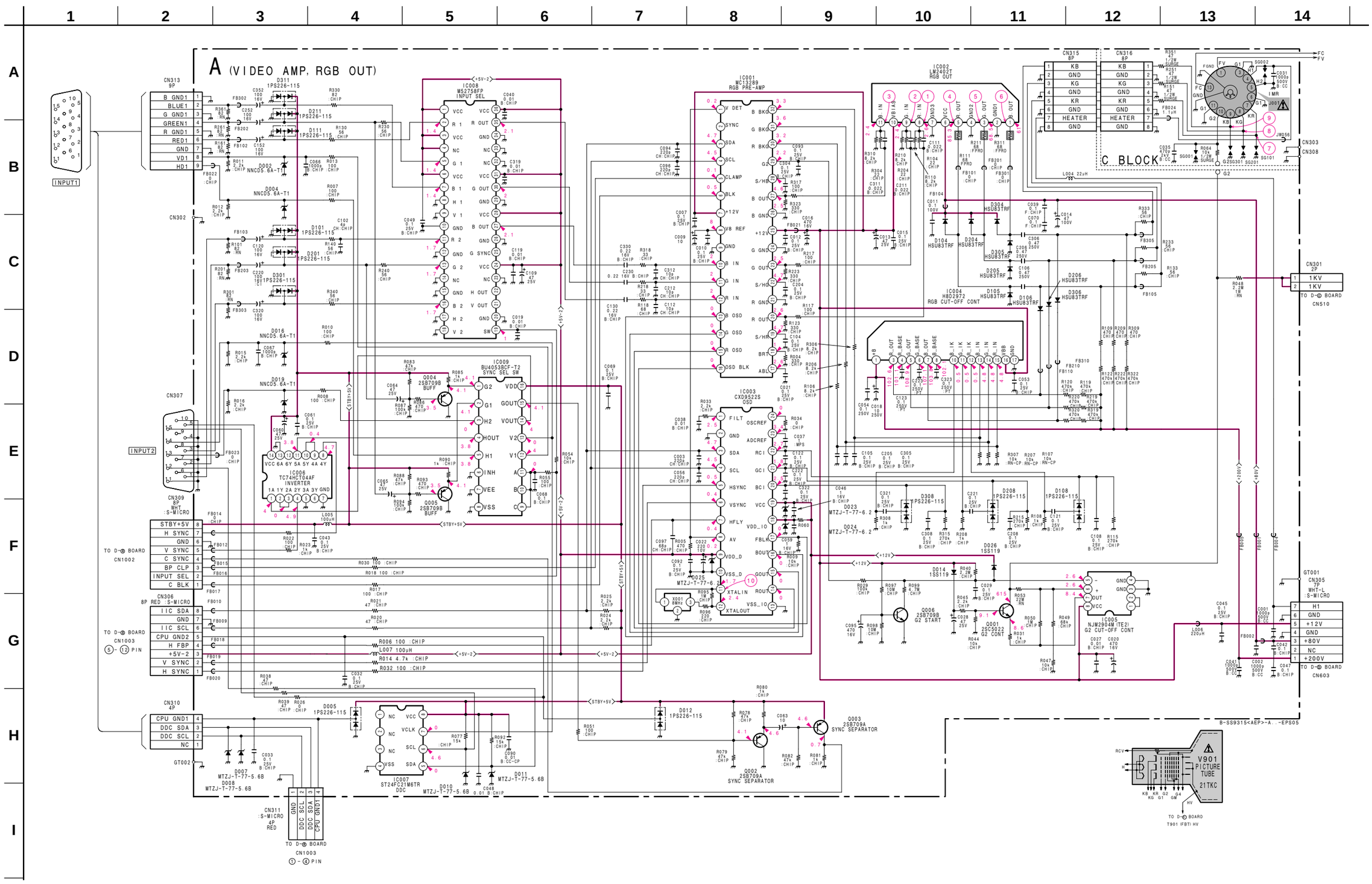
CRYSTAL	
X001	B-3

∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-7)

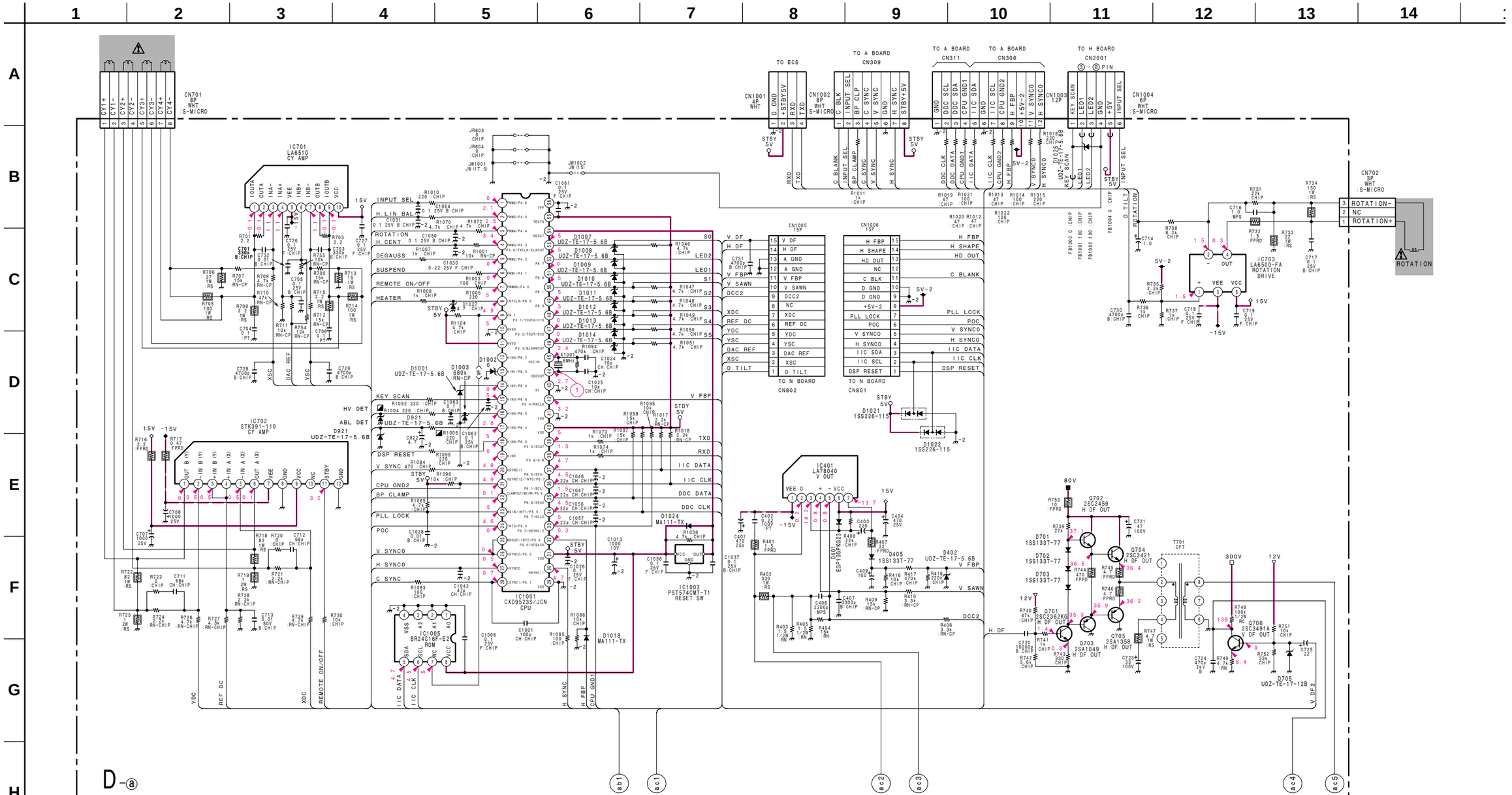
(1) Schematic Diagram of A Board

• A BOARD WAVEFORMS

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
4.16 Vp-p (H)	4.16 Vp-p (H)	4.08 Vp-p (H)	49.8 Vp-p (H)	49.8 Vp-p (H)	48.8 Vp-p (H)	49.8 Vp-p (H)	49.8 Vp-p (H)	48.8 Vp-p (H)	1.78 Vp-p (8 MHz)



(2) Schematic Diagrams of D (ⓐ, ⓑ, ⓒ) Board



- Divided circuit diagram
  One sheet of D board circuit diagram is divided into three sheets, each having the code D-ⓐ to D-ⓒ. For example, the destination ab1 on the code D-ⓐ sheet is connected to ab1 on the D-ⓑ sheet.

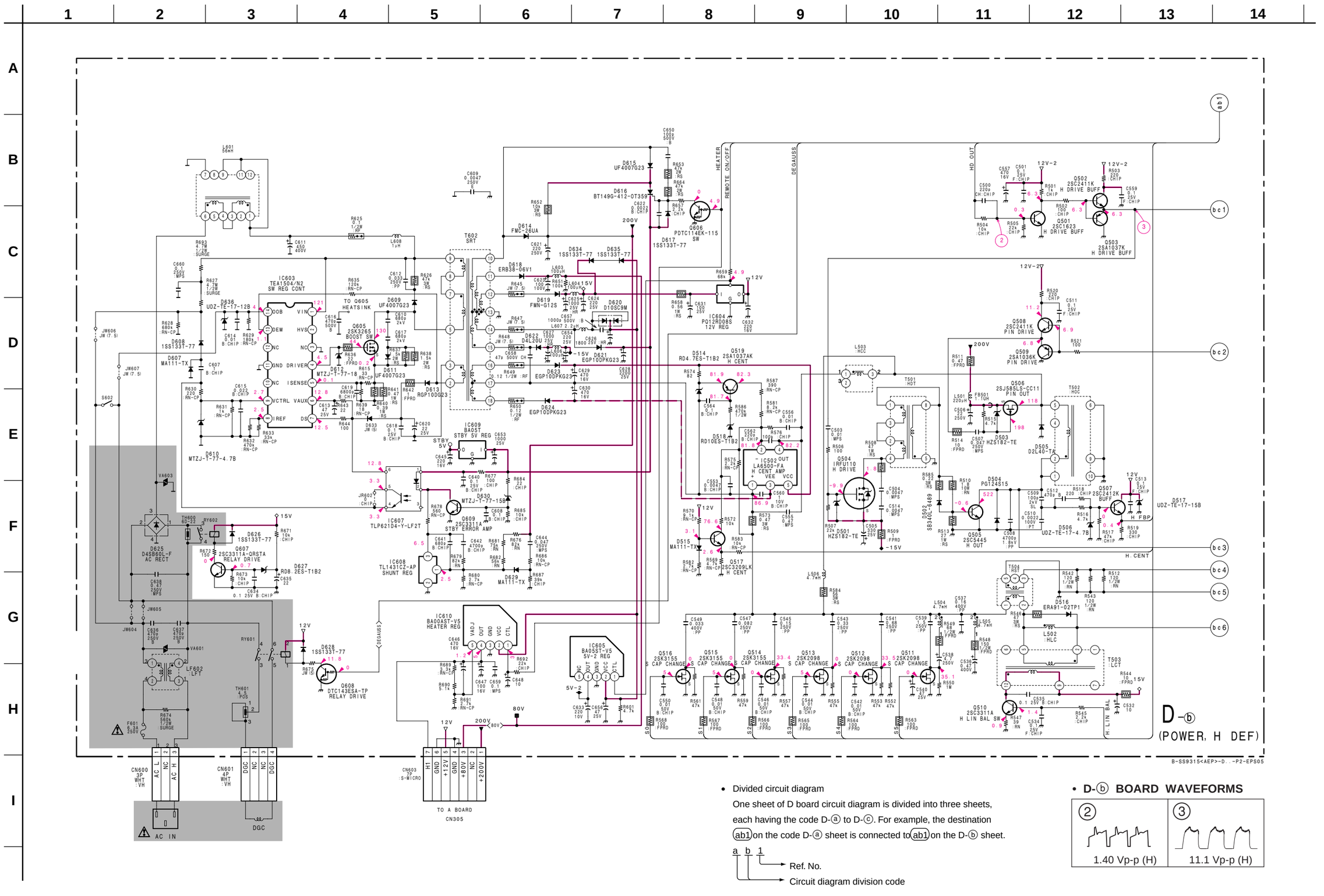
  a b 1
  - 1 → Ref. No.
  - a b → Circuit diagram division code

- **D-ⓐ BOARD WAVEFORM**

  ①
  1.94 Vp-p (8 MHz)

Schematic diagram
← A board

Schematic diagram
D-ⓐ board →

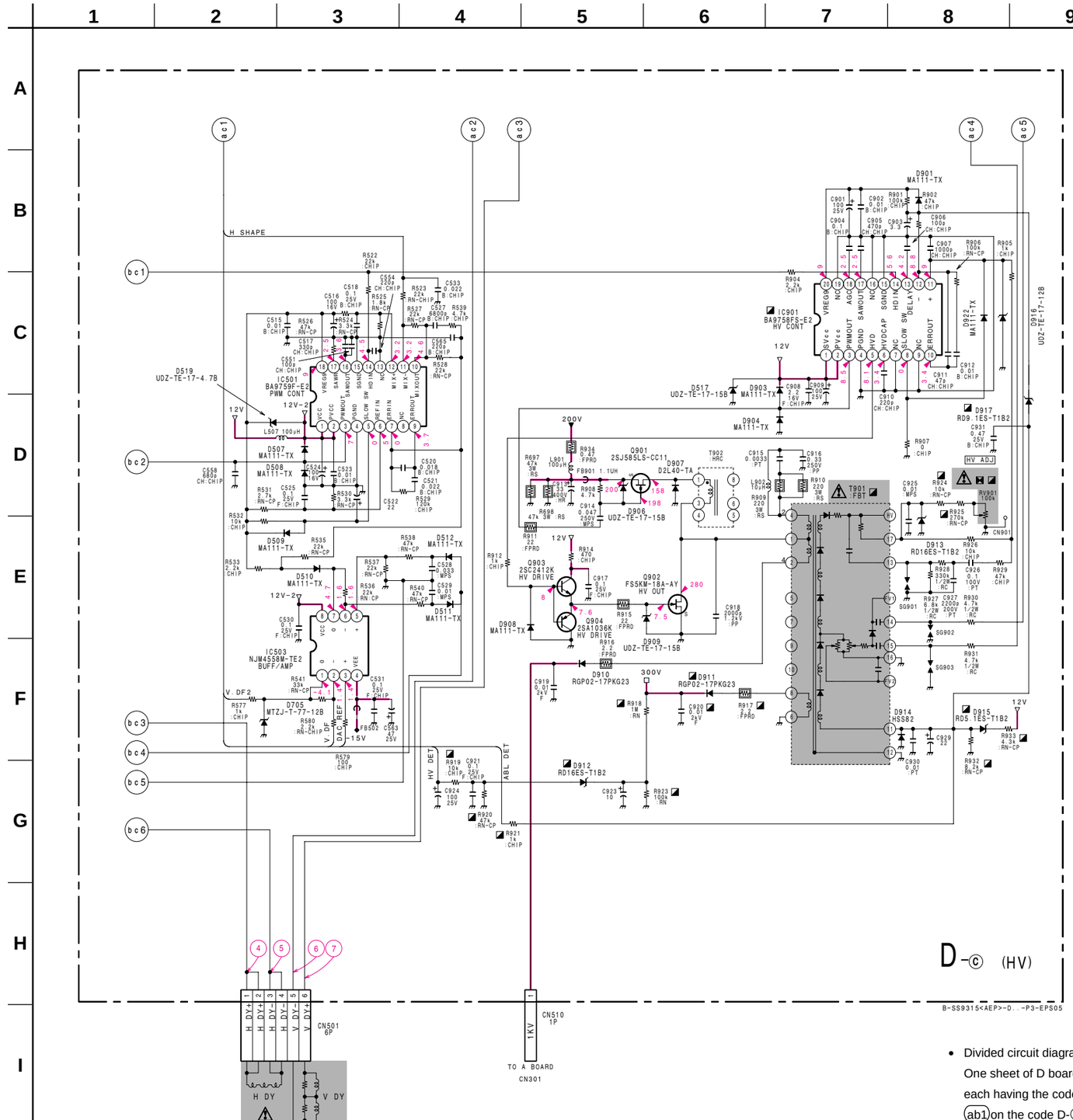


- Divided circuit diagram
  One sheet of D board circuit diagram is divided into three sheets, each having the code D-ⓐ to D-ⓒ. For example, the destination ab1 on the code D-ⓐ sheet is connected to ab1 on the D-ⓑ sheet.

a b 1
- 1 → Ref. No.
- b → Circuit diagram division code

- **D-ⓑ BOARD WAVEFORMS**

②	③
1.40 Vp-p (H)	11.1 Vp-p (H)



- Divided circuit diagram
  One sheet of D board circuit diagram is divided into three sheets, each having the code D-ⓐ to D-ⓒ. For example, the destination ab1 on the code D-ⓐ sheet is connected to ab1 on the D-ⓑ sheet.

a b 1
- 1 → Ref. No.
- b → Circuit diagram division code

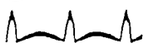
Schematic diagram
← D-ⓑ board

Schematic diagram
D-ⓒ board →

• D-ⓒ BOARD WAVEFORMS

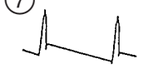
④

131.5 Vp-p (H)

⑤

60.8 Vp-p (H)

⑥

1.41 Vp-p (H)

⑦

53.0 Vp-p (H)

• D BOARD SEMICONDUCTOR LOCATION

IC		
IC401	E-3	
IC501	C-1	
IC502	B-3	
IC503	D-1	
IC603	A-4	
IC604	C-3	
IC605	B-2	
IC607	A-3	
IC608	A-3	
IC609	A-2	
IC610	A-3	
IC701	E-1	
IC702	E-2	
IC703	A-1	
IC901	D-5	
IC1001	B-1	
IC1003	B-2	
IC1005	B-1	

TRANSISTOR		
		✻
Q501	C-1	①
Q502	C-1	①
Q503	C-1	①
Q504	C-5	–
Q505	D-5	–
Q506	C-3	–
Q507	C-2	①
Q508	D-1	①
Q509	D-1	①
Q510	C-2	–
Q511	D-3	–
Q512	D-3	–
Q513	D-2	–
Q514	D-2	–
Q515	D-2	–
Q516	D-2	–
Q517	B-2	–
Q519	B-2	①
Q605	A-4	–
Q606	B-4	①
Q607	B-5	–
Q608	C-7	–
Q609	A-3	–
Q701	E-4	–
Q702	E-4	–
Q703	E-4	–
Q704	D-4	–
Q705	E-4	–
Q706	E-6	–
Q901	C-7	–
Q902	C-6	–
Q903	D-5	①
Q904	D-6	①

DIODE		
		✻
D401	E-3	–
D402	D-1	③
D405	E-3	–
D501	C-5	–
D502	D-5	–
D503	C-3	–
D504	C-5	–
D505	C-3	–
D506	C-2	③
D507	D-1	③
D508	D-1	③
D509	C-1	③
D510	D-1	③
D511	D-1	③
D512	D-1	③
D514	B-3	–
D515	B-2	③
D516	D-3	–
D517	E-5	③
D518	A-2	–
D519	C-1	③
D607	A-3	③
D608	A-3	–
D609	A-4	–
D610	A-3	–
D611	A-4	–
D612	A-4	–
D613	A-3	–
D614	B-5	–
D615	B-4	–
D616	C-4	–
D617	C-4	–
D618	B-4	–
D619	C-4	–
D620	B-4	–
D621	B-4	–
D622	B-4	–
D623	B-3	–
D624	B-3	–
D625	B-6	–
D626	B-6	–
D627	B-5	–
D628	B-6	–
D629	A-2	③
D630	A-3	–
D633	A-3	–
D634	C-3	–
D635	B-3	–
D636	A-4	③
D701	E-4	–
D702	E-4	–
D703	E-4	–
D705	D-1	③
D901	D-5	③
D903	D-5	③
D904	D-5	③
D906	C-7	③
D907	C-6	–
D908	D-5	③
D909	C-6	③
D910	D-7	–
D911	D-7	–
D912	E-7	–
D913	E-7	–
D914	E-7	–
D915	E-6	–
D916	D-5	③
D917	E-5	–
D920	D-1	③
D921	D-1	③
D922	D-5	③
D1003	B-1	③
D1007	B-2	③
D1008	B-1	③
D1009	C-1	③
D1010	B-1	③
D1011	B-1	③
D1012	B-1	③
D1013	B-1	③
D1014	B-1	③
D1018	B-1	③
D1021	C-1	③
D1022	C-1	⑥
D1024	B-1	③
D1025	C-1	③
D1027	C-1	③

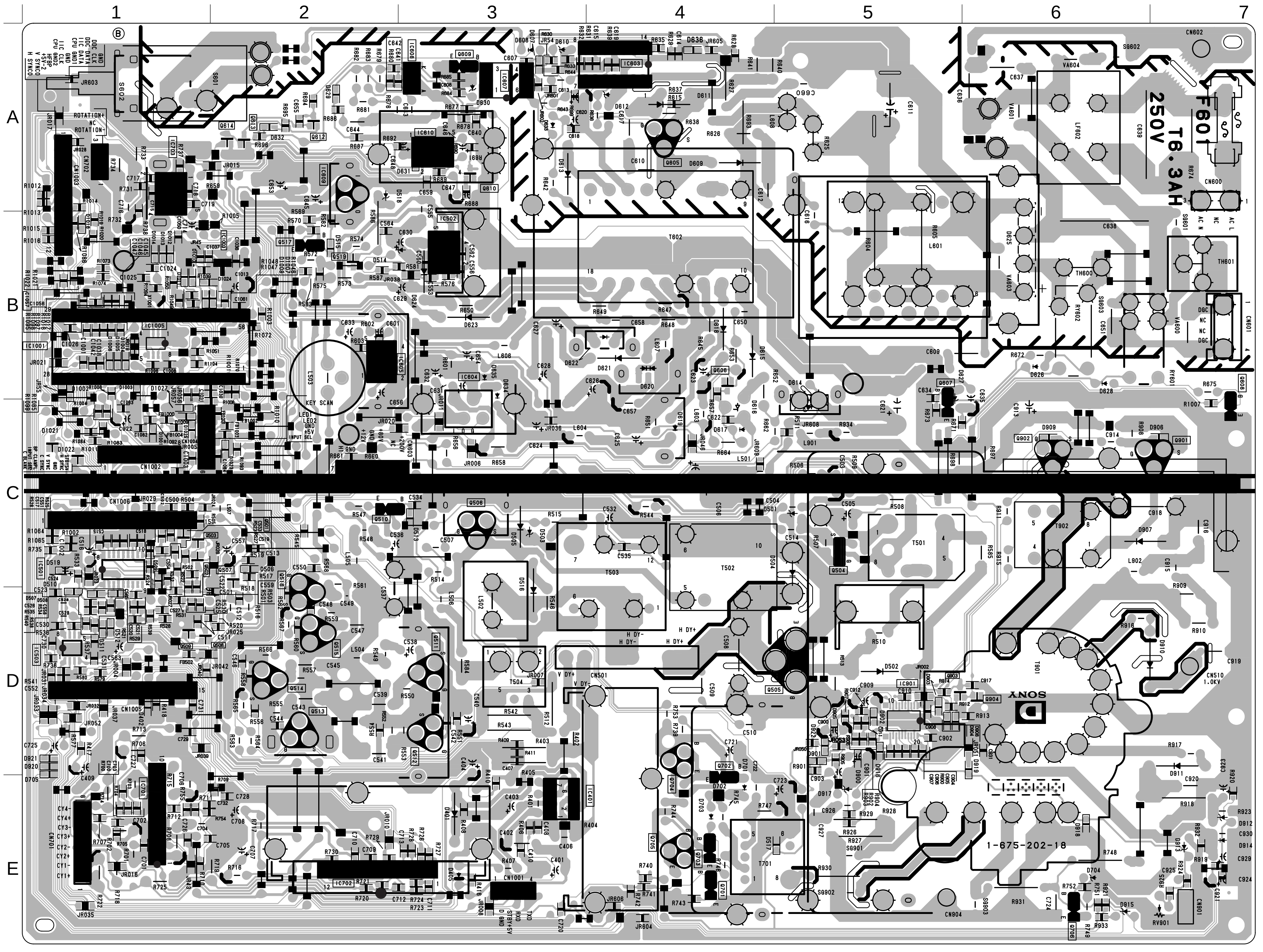
VARIABLE RESISTOR	
RV901	E-7

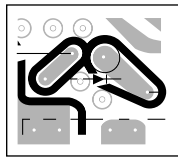
CRYSTAL	
X1001	B-1

✻: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-7)

D [µ-COM, CY, DEFLECTION, POWER, HDEF, HV]

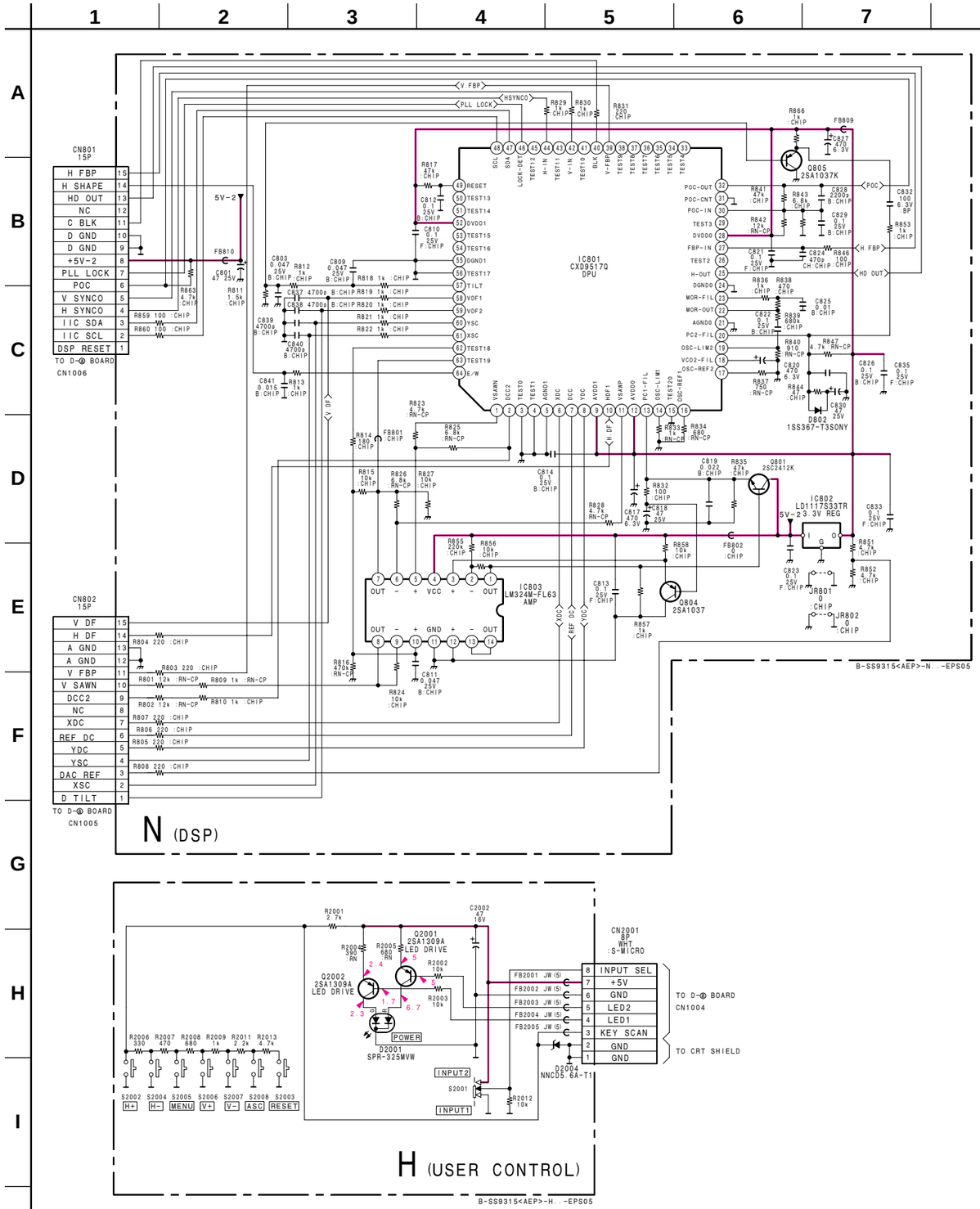
— D BOARD —



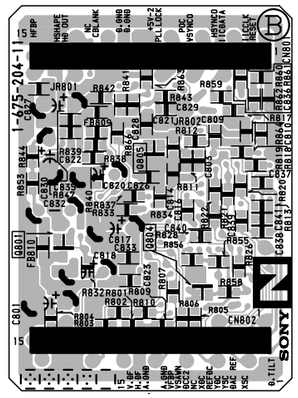


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

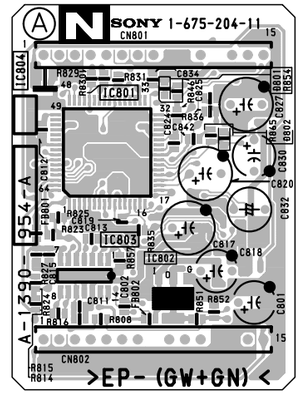
(3) Schematic Diagrams of N, H Boards



— N BOARD (Conductor Side) —



— N BOARD (Component Side) —

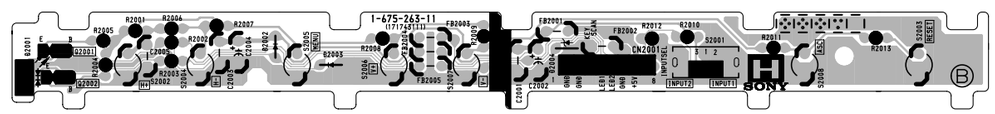


N BOARD
Terminal name of semiconductors in silk screen printed circuit (∗)

Ref.	∗
Q801, Q804, Q805	①

∗: Refer to Terminal name of semiconductors in silk screen printed circuit (see page 5-7)

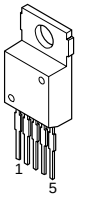
— H BOARD —



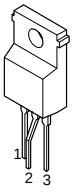
Schematic diagrams N, H boards ➡

5-5. SEMICONDUCTORS

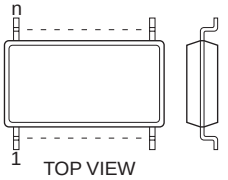
BA00AST-V5
BA05ST-V5
H8D2972
LA6500-FA



BA05T
LD1117S33TR

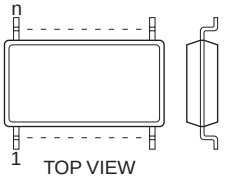


BA9758FS-E2
BA9759F-E2



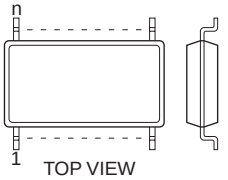
18 pin SOP

BR24C16F-E2
NJM2904M
NJM2904M(TE2)
NJM4558M-TE2
µPC4558G2
ST24FC21M6TR



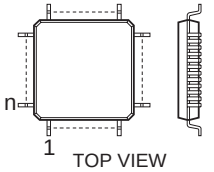
8 pin SOP

BU4053BCF-T2



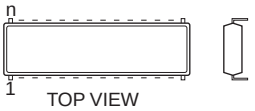
16 pin SOP

CXD9517Q



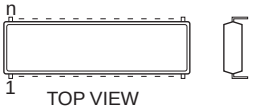
64 pin QFP

CXD9522S



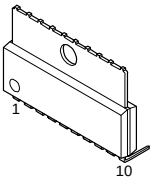
24 pin DIP

CXD9523S/JCN
ST92T175N1B1/JCJ

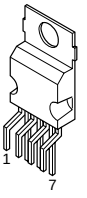


56 pin DIP

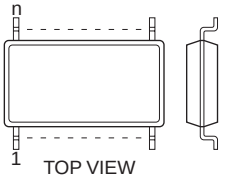
LA6510



LA78040
LM2402T

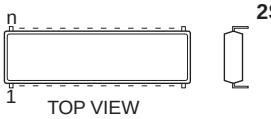


LM324M
LM324M-FL63
MC74HCT14AFEL



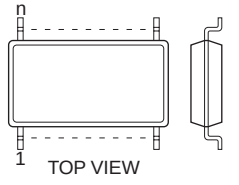
14 pin SOP

MC13289



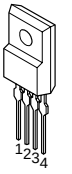
32 pin DIP

M52758FP

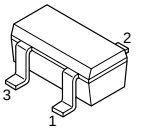


36 pin SOP

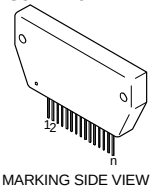
PQ12RD8S



PST574CMT-T1

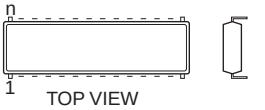


STK391-110



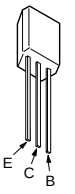
MARKING SIDE VIEW

TEA1504/N2

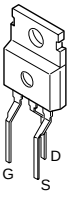


14 pin DIP

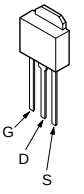
DTC144ESA-TP
PDTC114-EK-115
2SA1358-Y
2SC3421-Y



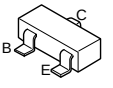
FS5KM-16A
FS5KM-18A-AY
2SJ516LB2SONY
2SJ585LS-CC11
2SK3265LB2SONY



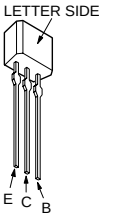
IRFU110
IRFU110A



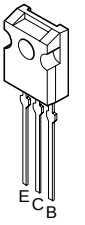
2SA1036K-Q
2SA1036K-T-146-Q
2SA1037AK-T146-R
2SA1037K-T-146-QR
2SA1162-G
2SB709A-QRS-TX
2SC1623-L5L6
2SC1623-T1-L5L6
2SC2411K-CQ
2SC2411K-T-146-CQ
2SC2412K-T-146-QR



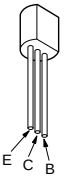
2SA1175-HFE
2SA1309A-QRSTA
2SC2459-GR-TPE4
2SC2784
2SC2784-E
2SC2785-HFE
2SC3311A-QRSTA
2SC3311A-RTA



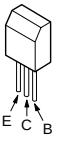
2SA1049-GR
2SA1049TP-GR



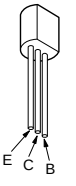
2SC2362K-G
2SC2362KG-AA



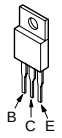
2SC3209LK
2SC3209LK-TP



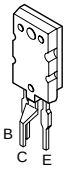
2SC3941A-Q(TA)



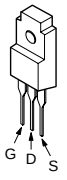
2SC5022-02



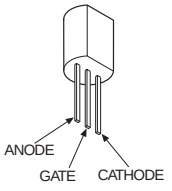
2SC5445(LBSONY1)



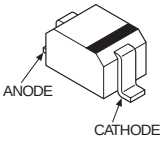
2SK2098-01MR-F119
2SK3155-01
2SK3157-01



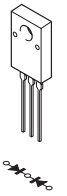
BT149G-412-OT359
TL1431CZ-AP



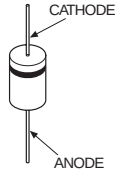
DTZ-TT11-15B
DTZ4.7C
MA111-(K8).S0
MA111-TX
RD12SB2
RD5.6S-B
UDZ-TE-17-12B
UDZ-TE-17-4.7B
UDZ-TE-17-5.6B



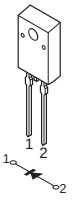
D10SC9M



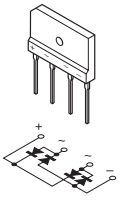
D2L40-TA
ERB38-06V1
HSS82
MTZJ-T-77-18
MTZJ-T-77-5.6B
NNCD5.6A-T1
RGP02-17EL-6433
RGP02-17PKG23
RGP10DG23
UF4007G23
1SS133T-77
1SS367-T3SONY



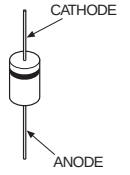
D4L20U
FMC-26UA
FMN-G12S
FMQ-G5FMS
PG124S15
YG911S2R



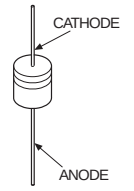
D4SB60L
D4SB60L-F



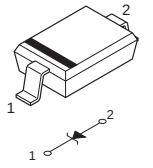
EGP10D
EGP10GPKG23
ERA91-02
ERA91-02TP1
RH-1A



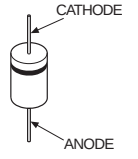
EGP10DPKG23
HZS182-TE
HZS9.1NB2
MTZJ-T-77-15B
MTZJ-6.2B
MTZJ-T-77-4.7B
MTZJ-T-77-6.2
RD10ES-T1B2
RD10ESB2
RD15ES-B2
RD16ES-B3
RD16ES-T1B2
RD18ES-B2
RD18ESB
RD4.7ES-T1B2
RD4.7ESB2
RD5.1ES-B2
RD5.1ES-T1B2
RD5.6ESB2
RD8.2ES-B2
RD8.2ES-T1B2
RD9.1ES-T1B2
1SS119-25
1SS119-25TD



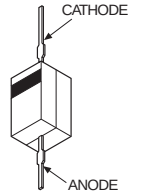
HSU83TRF



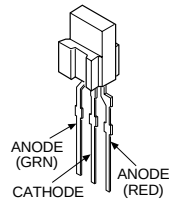
SB340



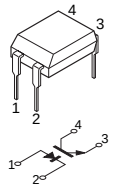
SB340L-6489



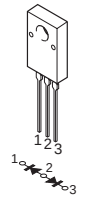
SPR325MTW



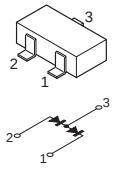
TLP621D4-Y-LF2T



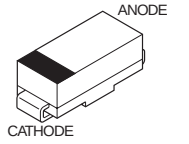
UDZ-TE-17-15B



1PS226-115



1SS376TE-17



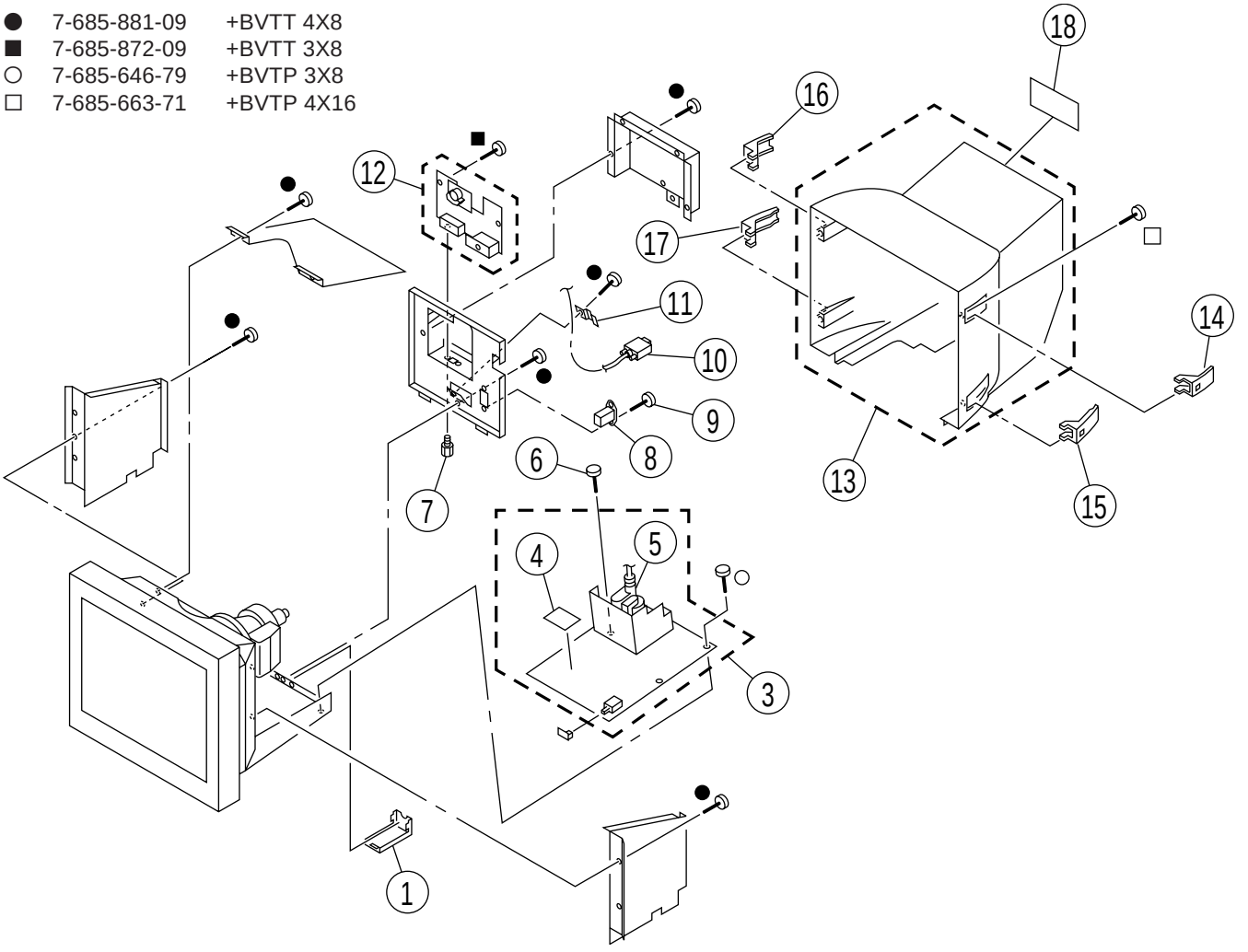
SECTION 6
EXPLODED VIEWS

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified ! marked are critical for safety.
Replace only with the part number specified.

6-1. CHASSIS

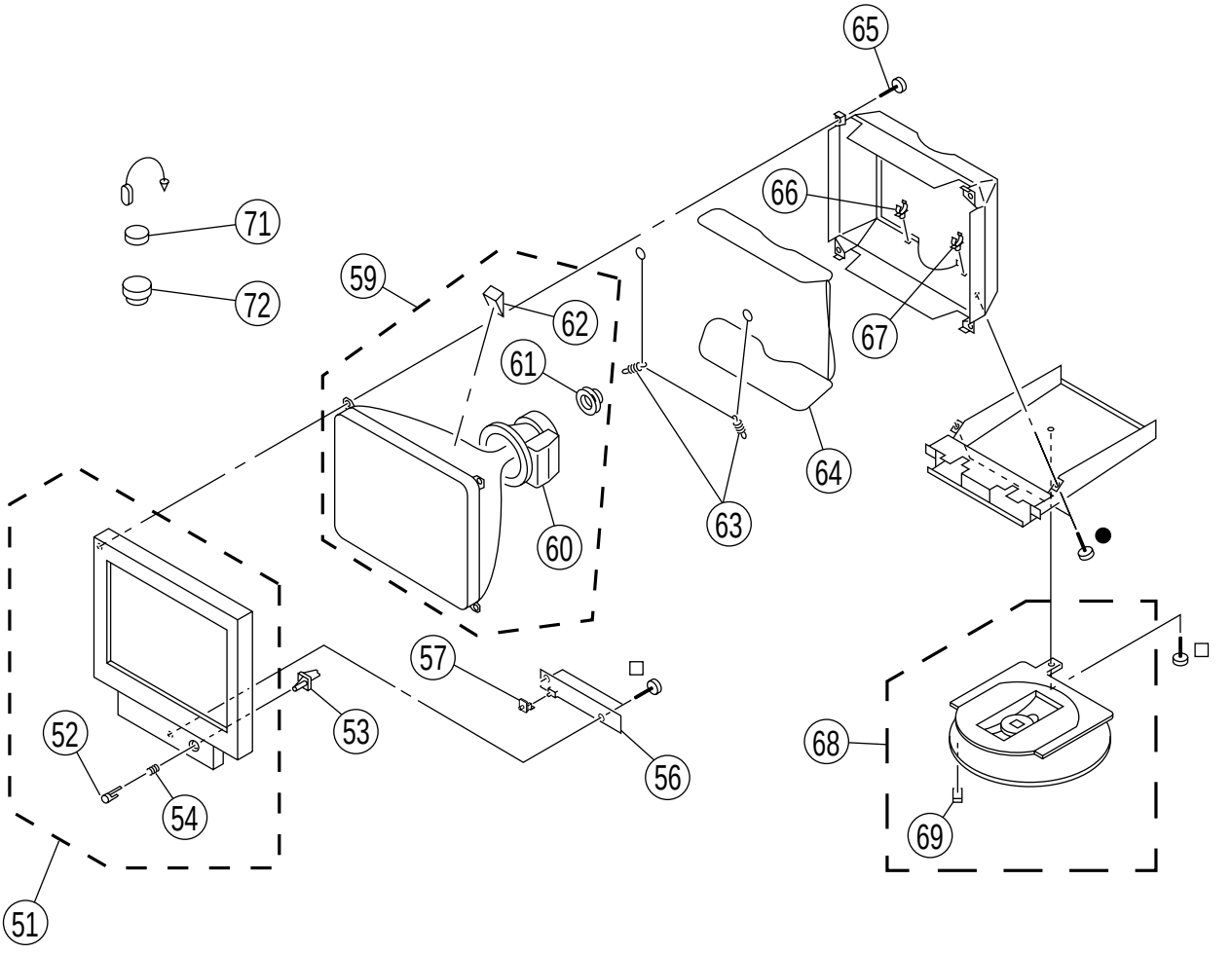
● 7-685-881-09 +BVTT 4X8
■ 7-685-872-09 +BVTT 3X8
○ 7-685-646-79 +BVTP 3X8
□ 7-685-663-71 +BVTP 4X16



REF.NO.	PART NO.	DESCRIPTION	REMARK
1	4-072-290-01	COVER, CABLE (6551-T3N)	
1	4-072-290-11	COVER, CABLE (6551-U3N)	
3	8-933-463-00	D BOARD, COMPLETE	4, 5
4	8-933-426-00	N BOARD, COMPLETE	
5	⚠ X-4560-174-1	TRANSFORMER ASSY, FLYBACK (NX4700//J1E4)	
6	4-062-115-01	SCREW +P 3.5X20 TYPE2	
7	4-070-122-01	SCREW (HD15)	
8	⚠ 1-251-382-31	INLET, AC 3P (WITH NOISE FILTER)	
9	4-052-345-01	SCREW, (3X8) (+K), TAPPING	
10	1-791-491-11	CABLE ASSY (15PD-SUB CONNECTOR) (6551-T3N)	
10	1-791-491-21	CABLE ASSY (15PD-SUB CONNECTOR) (6551-U3N)	
11	4-045-131-01	STOPPER, CABLE	
12	8-933-422-00	A BOARD, COMPLETE	
13	X-4037-238-1	BUCKET ASSY (W), REAR (6551-T3N)	
13	X-4037-241-1	BUCKET ASSY (B), REAR (6551-U3N)	
14	4-072-288-01	COVER (UR), SCREW (6551-T3N)	
14	4-072-288-11	COVER (UR), SCREW (6551-U3N)	
15	4-072-287-01	COVER (LL), SCREW (6551-T3N)	
15	4-072-287-11	COVER (LL), SCREW (6551-U3N)	
16	4-072-289-01	COVER (UL), SCREW (6551-T3N)	
16	4-072-289-11	COVER (UL), SCREW (6551-U3N)	
17	4-072-286-01	COVER (LR), SCREW (6551-T3N)	
17	4-072-286-11	COVER (LR), SCREW (6551-U3N)	
18	* 4-073-923-81	LABEL, INFORMATION (6551-T3N)	
18	* 4-073-923-91	LABEL, INFORMATION (6551-U3N)	

6-2. PICTURE TUBE

● 7-685-881-09 +BVTT 4X8
□ 7-685-663-71 +BVTP 4X16

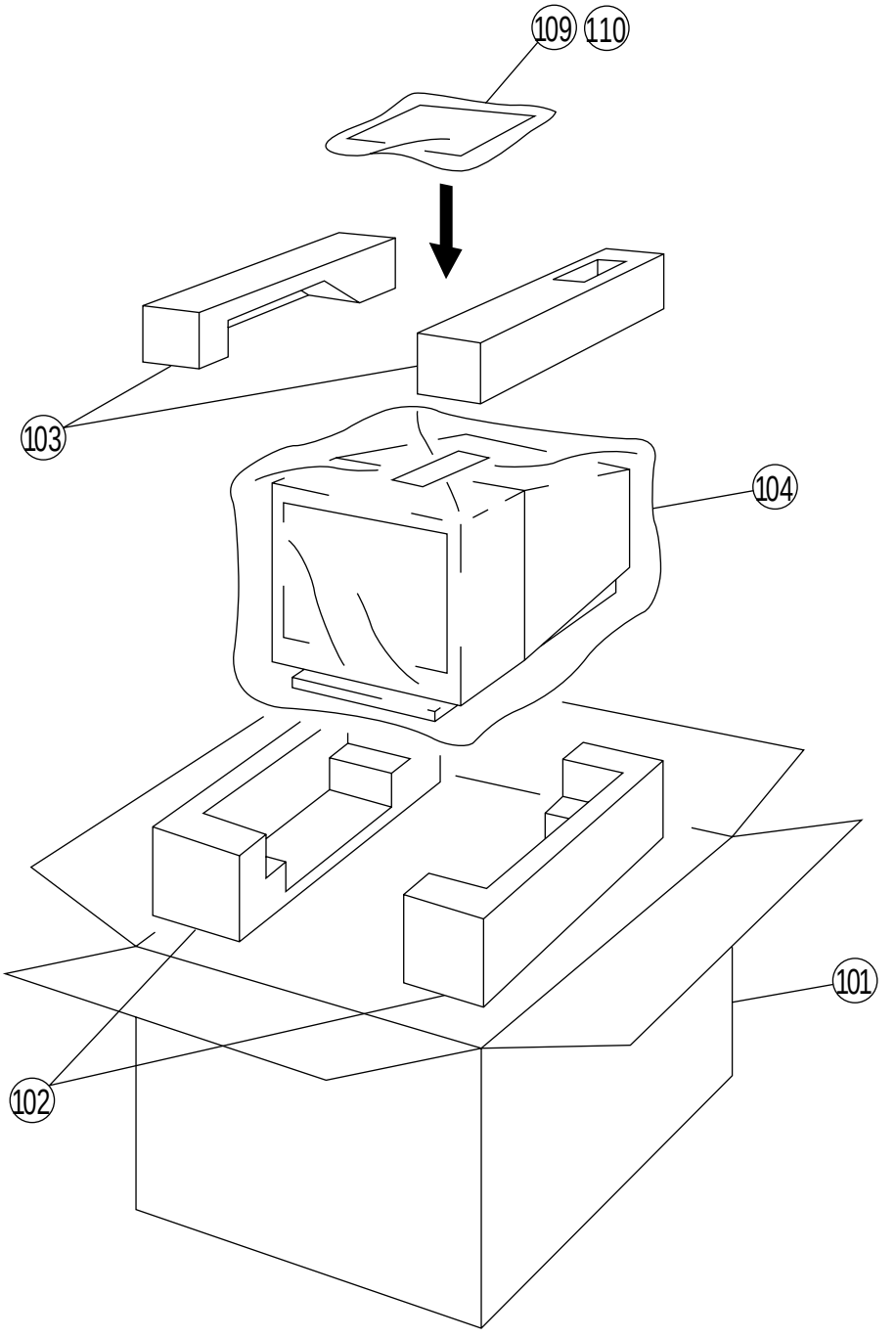


The components identified ! marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
51	X-4037-242-1	BEZEL ASSY (W) (6551-T3N)	52, 54
51	X-4037-243-1	BEZEL ASSY (B) (6551-U3N)	52, 54
52	4-072-982-01	BUTTON, POWER (6551-T3N)	
52	4-072-982-11	BUTTON, POWER (6551-U3N)	
53	4-072-986-01	BAR, EXTENSION	
54	3-653-339-01	SPRING, COMPRESSION	
56	8-933-425-00	H BOARD, COMPLETE	
57	4-072-987-01	COVER, SWITCH (6551-T3N)	
57	4-072-987-11	COVER, SWITCH (6551-U3N)	
59	⚠ 8-736-407-61	ITC ASSY (19TKC-R1)	60-62
60	⚠ 1-451-516-11	DEFLECTION YOKE (Y19TKK-K)	
61	⚠ 1-452-912-61	NECK ASSEMBLY (NA-2914)	
62	2-162-100-21	SPACER, DEFLECTION YOKE	
63	* 4-047-316-01	SPRING, EXTENSION	
64	⚠ 1-419-285-11	COIL, DEGAUSSING	
65	4-365-808-01	SCREW (5), TAPPING	
66	4-071-175-01	HOLDER, DGC	
67	4-041-021-02	HOLDER, DEGAUSSING COIL	
68	X-4036-872-1	STAND ASSY (6551-T3N)	
68	X-4036-918-1	STAND ASSY (6551-U3N)	69
69	* 4-061-996-01	CUSHION	
71	1-452-032-00	MAGNET, DISC; 10mm ϕ	
72	1-452-094-00	MAGNET, ROTATABLE DISC; 15mm ϕ	

6-3. PACKING MATERIALS

The components identified ! marked are critical for safety.
Replace only with the part number specified.



REF.NO.	PART NO.	DESCRIPTION	REMARK
101	*4-073-027-01	INDIVIDUAL CARTON	
102	*4-073-029-01	CUSHION (LOWER) (ASSY)	
103	*4-073-028-01	CUSHION (UPPER) (ASSY)	
104	4-063-577-01	BAG, POLYETHYLENE (6551-T3N)	
104	4-063-578-11	BAG, PROTECTION (6551-U3N)	
109	1-772-399-21	DISK, INFORMATION IBM	
110	3-868-265-21	MANUAL, INSTRUCTION	

SECTION 7
ELECTRICAL PARTS LIST

A

NOTE:

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*8-933-422-00	A BOARD, COMPLETE			
		**********			
	4-382-854-01	SCREW (M3X8), P, SW (+) (IC002)			
	<CAPACITOR>				
C001	1-162-318-11	CERAMIC	0.001uF	10%	500V
C002	1-162-318-11	CERAMIC	0.001uF	10%	500V
C003	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C007	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C009	1-126-964-11	ELECT	10uF	20%	50V
C010	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C011	1-106-220-00	MYLAR	0.1uF	10%	100V
C012	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C013	1-107-888-11	ELECT	47uF	20%	25V
C014	1-107-932-11	ELECT	47uF	20%	100V
C015	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C016	1-126-935-11	ELECT	470uF	20%	16V
C018	1-107-652-11	ELECT	10uF	20%	250V
C019	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C020	1-126-935-11	ELECT	470uF	20%	16V
C021	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C022	1-126-934-11	ELECT	220uF	20%	10V
C027	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C028	1-104-664-11	ELECT	47uF	20%	25V
C029	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C031	1-162-318-11	CERAMIC	0.001uF	10%	500V
C032	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C033	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C035	1-162-134-11	CERAMIC	470pF	10%	2KV
C037	1-136-177-00	FILM	1uF	5%	50V
C038	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C039	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C040	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C041	1-162-318-11	CERAMIC	1uF		16V
C042	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C043	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C045	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C046	1-164-346-11	CERAMIC CHIP	1uF		16V
C047	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C048	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C049	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C053	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C054	1-104-341-11	MYLAR	0.1uF	10%	250V
C056	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C059	1-164-346-11	CERAMIC CHIP	1uF		16V
C060	1-104-664-11	ELECT	47uF	20%	25V
C061	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C063	1-126-964-11	ELECT	10uF	20%	50V
C064	1-104-664-11	ELECT	47uF	20%	25V
C065	1-104-664-11	ELECT	47uF	20%	25V
C066	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C067	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C068	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C069	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C070	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C090	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C092	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C093	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C094	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C095	1-126-935-11	ELECT	470uF	20%	16V
C096	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C097	1-163-113-00	CERAMIC CHIP	68pF	5%	50V
C102	1-163-087-00	CERAMIC CHIP	4pF	0.25pF	50V
C104	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C105	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C106	1-117-450-11	MYLAR	0.47uF	10%	250V
C108	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C109	1-104-664-11	ELECT	47uF	20%	25V
C111	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C112	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C119	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C120	1-126-933-11	ELECT	100uF	20%	16V
C121	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C122	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C123	1-136-189-00	MYLAR	0.1uF	10%	250V
C130	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C152	1-126-933-11	ELECT	100uF	20%	16V
C204	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C205	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C206	1-117-450-11	MYLAR	0.47uF	10%	250V
C208	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C211	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C212	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V

A

REF.NO.	PART NO.	DESCRIPTION	REMARK
C220	1-126-933-11	ELECT 100uF 20% 16V	
C221	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C222	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C223	1-104-341-11	MYLAR 0.1uF 10% 250V	
C230	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C252	1-126-933-11	ELECT 100uF 20% 16V	
C304	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C305	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C306	1-117-450-11	MYLAR 0.47uF 10% 250V	
C308	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C311	1-163-037-11	CERAMIC CHIP 0.022uF 10% 50V	
C312	1-163-227-11	CERAMIC CHIP 10pF 0.5pF 50V	
C319	1-163-021-91	CERAMIC CHIP 0.01uF 10% 50V	
C320	1-126-933-11	ELECT 100uF 20% 16V	
C321	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C322	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C323	1-104-341-11	MYLAR 0.1uF 10% 250V	
C330	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C352	1-126-933-11	ELECT 100uF 20% 16V	
		<CONNECTOR>	
CN301	1-764-101-11	PIN, CONNECTOR (PC BOARD) 2P	
CN302	1-695-915-11	TAB (CONTACT)	
CN303	1-695-915-11	TAB (CONTACT)	
CN305*	1-564-522-11	PLUG, CONNECTOR 7P	
CN306*	1-564-511-11	PLUG, CONNECTOR 8P	
CN307	1-793-183-11	CONNECTOR, D SUB 15P	
CN308	1-695-915-11	TAB (CONTACT)	
CN309*	1-564-511-11	PLUG, CONNECTOR 8P	
CN310*	1-564-507-11	PLUG, CONNECTOR 4P	
CN311*	1-564-507-11	PLUG, CONNECTOR 4P	
CN313*	1-564-512-11	PLUG, CONNECTOR 9P	
		<DIODE>	
D002	8-719-109-89	ZENER DIODE RD5.6ESB2	
D004	8-719-109-89	ZENER DIODE RD5.6ESB2	
D005	8-719-062-51	DIODE 1PS226-115	
D007	8-719-109-89	ZENER DIODE RD5.6ESB2	
D008	8-719-109-89	ZENER DIODE RD5.6ESB2	
D010	8-719-109-89	ZENER DIODE RD5.6ESB2	
D011	8-719-109-89	ZENER DIODE RD5.6ESB2	
D012	8-719-062-51	DIODE 1PS226-115	
D014	8-719-911-19	DIODE 1SS119-25	
D016	8-719-109-89	ZENER DIODE RD5.6ESB2	
D019	8-719-109-89	ZENER DIODE RD5.6ESB2	
D023	8-719-921-54	DIODE MTZJ-6.2B	
D024	8-719-921-54	DIODE MTZJ-6.2B	
D025	8-719-921-54	DIODE MTZJ-6.2B	
D026	8-719-911-19	DIODE 1SS119-25	
D101	8-719-062-51	DIODE 1PS226-115	
D104	8-719-052-12	DIODE 1SS376TE-17	
D105	8-719-052-12	DIODE 1SS376TE-17	
D106	8-719-052-12	DIODE 1SS376TE-17	
D108	8-719-062-51	DIODE 1PS226-115	
D111	8-719-062-51	DIODE 1PS226-115	
D201	8-719-062-51	DIODE 1PS226-115	
D204	8-719-052-12	DIODE 1SS376TE-17	
D205	8-719-052-12	DIODE 1SS376TE-17	
D206	8-719-052-12	DIODE 1SS376TE-17	
D208	8-719-062-51	DIODE 1PS226-115	
D211	8-719-062-51	DIODE 1PS226-115	
D301	8-719-062-51	DIODE 1PS226-115	
D304	8-719-052-12	DIODE 1SS376TE-17	
D305	8-719-052-12	DIODE 1SS376TE-17	
D306	8-719-052-12	DIODE 1SS376TE-17	
D308	8-719-062-51	DIODE 1PS226-115	
D311	8-719-062-51	DIODE 1PS226-115	
		<FERRITE BEAD>	
FB001	1-412-911-31	FERRITE 1.1uH	
FB002	1-412-911-31	FERRITE 1.1uH	
FB004	1-412-911-31	FERRITE 1.1uH	
FB005	1-412-911-31	FERRITE 1.1uH	
FB009	1-414-231-22	INDUCTOR CHIP	
FB010	1-414-231-22	INDUCTOR CHIP	
FB012	1-414-231-22	INDUCTOR CHIP	
FB014	1-216-295-11	SHORT 0	
FB015	1-414-231-22	INDUCTOR CHIP	
FB016	1-414-231-22	INDUCTOR CHIP	
FB017	1-414-231-22	INDUCTOR CHIP	
FB018	1-414-231-22	INDUCTOR CHIP	
FB019	1-414-231-22	INDUCTOR CHIP	
FB020	1-414-231-22	INDUCTOR CHIP	
FB021	1-414-231-22	INDUCTOR CHIP	
FB022	1-216-295-11	SHORT 0	
FB023	1-216-295-11	SHORT 0	
FB024	1-412-911-31	FERRITE 1.1µH	
FB101	1-216-295-11	SHORT 0	
FB102	1-500-419-22	FERRITE	
FB103	1-500-419-22	FERRITE	
FB104	1-412-911-31	FERRITE 1.1uH	
FB105	1-500-419-22	FERRITE	
FB110	1-412-911-31	FERRITE 1.1uH	
FB201	1-216-295-11	SHORT 0	
FB202	1-500-419-22	FERRITE	
FB203	1-500-419-22	FERRITE	
FB205	1-500-419-22	FERRITE	
FB210	1-412-911-31	FERRITE 1.1uH	
FB301	1-216-295-11	SHORT 0	
FB302	1-500-419-22	FERRITE	
FB303	1-500-419-22	FERRITE	
FB305	1-500-419-22	FERRITE	
FB310	1-412-911-31	FERRITE 1.1uH	
		<TERMINAL>	
GT001*	1-537-738-21	TERMINAL, EARTH	
GT002*	1-537-738-21	TERMINAL, EARTH	

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

A

REF.NO.	PART NO.	DESCRIPTION	REMARK
		<IC>	
IC001	8-759-599-70	IC MC13289	
IC002	8-759-591-40	IC LM2402T	
IC003	8-759-639-50	IC CXD9522S	
IC004	8-749-015-92	IC H8D2972	
IC005	8-759-701-01	IC NJM2904M	
IC006	8-759-233-66	IC TC74HCT04AFEL	
IC007	8-759-661-55	IC ST24FC21M6TR	
IC008	8-759-541-25	IC M52758FP	
IC009	8-759-932-69	IC BU4053BCF-T2	
		<JACK>	
J001 ⚠	1-451-499-11	SOCKET, PICTURE TUBE	
		<CHIP CONDUCTOR>	
JR004	1-216-296-91	SHORT	0
JR005	1-216-295-11	SHORT	0
JR006	1-216-296-91	SHORT	0
JR007	1-216-296-91	SHORT	0
JR008	1-216-296-91	SHORT	0
JR009	1-216-296-91	SHORT	0
JR010	1-216-295-11	SHORT	0
JR011	1-216-295-11	SHORT	0
JR012	1-216-296-91	SHORT	0
JR013	1-216-295-11	SHORT	0
JR014	1-216-295-11	SHORT	0
JR015	1-216-295-11	SHORT	0
JR016	1-216-296-91	SHORT	0
JR017	1-216-296-91	SHORT	0
JR020	1-216-296-91	SHORT	0
JR021	1-216-296-91	SHORT	0
JR022	1-216-296-91	SHORT	0
JR023	1-216-296-91	SHORT	0
JR024	1-216-296-91	SHORT	0
JR025	1-216-295-11	SHORT	0
JR026	1-216-295-11	SHORT	0
JR027	1-216-295-11	SHORT	0
JR028	1-216-295-11	SHORT	0
JR029	1-216-296-91	SHORT	0
JR030	1-216-295-11	SHORT	0
JR031	1-216-296-91	SHORT	0
JR032	1-216-295-11	SHORT	0
JR033	1-216-296-91	SHORT	0
JR034	1-216-296-91	SHORT	0
		<COIL>	
L004	1-412-529-11	INDUCTOR	22uH
L005	1-412-537-31	INDUCTOR	100uH
L006	1-412-541-41	INDUCTOR	220uH
L007	1-408-615-31	INDUCTOR	100uH

REF.NO.	PART NO.	DESCRIPTION			REMARK
		<TRANSISTOR>			
Q001	8-729-032-61	TRANSISTOR 2SC5022-02			
Q002	8-729-216-22	TRANSISTOR 2SA1162-G			
Q003	8-729-216-22	TRANSISTOR 2SA1162-G			
Q004	8-729-216-22	TRANSISTOR 2SA1162-G			
Q005	8-729-216-22	TRANSISTOR 2SA1162-G			
Q006	8-729-216-22	TRANSISTOR 2SA1162-G			
		<RESISTOR>			
R004	1-216-037-00	RES-CHIP	330	5%	1/10W
R005	1-216-041-00	RES-CHIP	470	5%	1/10W
R006	1-216-025-11	RES-CHIP	100	5%	1/10W
R007	1-216-025-11	RES-CHIP	100	5%	1/10W
R008	1-216-025-11	RES-CHIP	100	5%	1/10W
R009	1-216-073-00	RES-CHIP	10K	5%	1/10W
R010	1-216-025-11	RES-CHIP	100	5%	1/10W
R011	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R012	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R013	1-216-025-11	RES-CHIP	100	5%	1/10W
R014	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R015	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R016	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R017	1-216-025-11	RES-CHIP	100	5%	1/10W
R018	1-216-025-11	RES-CHIP	100	5%	1/10W
R020	1-216-017-91	RES-CHIP	47	5%	1/10W
R021	1-216-017-91	RES-CHIP	47	5%	1/10W
R022	1-216-025-11	RES-CHIP	100	5%	1/10W
R023	1-216-049-11	RES-CHIP	1K	5%	1/10W
R024	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R025	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R026	1-216-295-11	SHORT	0		
R029	1-216-097-11	RES-CHIP	100K	5%	1/10W
R030	1-216-025-11	RES-CHIP	100	5%	1/10W
R031	1-216-049-11	RES-CHIP	1K	5%	1/10W
R032	1-216-025-11	RES-CHIP	100	5%	1/10W
R033	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R034	1-216-295-11	SHORT	0		
R038	1-216-017-91	RES-CHIP	47	5%	1/10W
R039	1-216-017-91	RES-CHIP	47	5%	1/10W
R040	1-216-129-00	RES-CHIP	2.2M	5%	1/10W
R044	1-216-073-00	RES-CHIP	10K	5%	1/10W
R045	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R047	1-216-073-00	RES-CHIP	10K	5%	1/10W
R048	1-219-398-51	METAL	2.2M	5%	1W
R049	1-216-093-91	RES-CHIP	68K	5%	1/10W
R050	1-216-121-11	RES-CHIP	1M	5%	1/10W
R051	1-216-025-11	RES-CHIP	100	5%	1/10W
R053	1-219-621-91	METAL	22M	10%	1/4W
R054	1-216-073-00	RES-CHIP	10K	5%	1/10W
R055	1-216-025-11	RES-CHIP	100	5%	1/10W
R060	1-414-231-22	INDUCTOR CHIP			
R064	1-219-749-91	CARBON	10K	5%	1/2W
R077	1-216-077-91	RES-CHIP	15K	5%	1/10W
R078	1-216-089-11	RES-CHIP	47K	5%	1/10W

A D

REF.NO.	PART NO.	DESCRIPTION			REMARK
R079	1-216-089-11	RES-CHIP	47K	5%	1/10W
R080	1-216-049-11	RES-CHIP	1K	5%	1/10W
R081	1-216-049-11	RES-CHIP	1K	5%	1/10W
R082	1-216-089-11	RES-CHIP	47K	5%	1/10W
R083	1-216-089-11	RES-CHIP	47K	5%	1/10W
R085	1-216-049-11	RES-CHIP	1K	5%	1/10W
R086	1-216-041-00	RES-CHIP	470	5%	1/10W
R087	1-216-097-11	RES-CHIP	100K	5%	1/10W
R088	1-216-089-11	RES-CHIP	47K	5%	1/10W
R090	1-216-049-11	RES-CHIP	1K	5%	1/10W
R092	1-216-077-91	RES-CHIP	15K	5%	1/10W
R093	1-216-041-00	RES-CHIP	470	5%	1/10W
R094	1-216-097-11	RES-CHIP	100K	5%	1/10W
R095	1-216-121-11	RES-CHIP	1M	5%	1/10W
R096	1-216-033-00	RES-CHIP	220	5%	1/10W
R097	1-218-179-11	RES-CHIP	10M	5%	1/10W
R098	1-218-179-11	RES-CHIP	10M	5%	1/10W
R099	1-208-291-11	RES-CHIP	4.7M	5%	1/10W
R101	1-215-395-00	METAL	82	1%	1/4W
R104	1-216-009-91	RES-CHIP	22	5%	1/10W
R106	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R107	1-216-675-91	METAL CHIP	10K	0.5%	1/10W
R108	1-216-049-11	RES-CHIP	1K	5%	1/10W
R109	1-216-041-00	RES-CHIP	470	5%	1/10W
R110	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R111	1-249-403-11	CARBON	68	5%	1/4W F
R115	1-216-107-00	RES-CHIP	270K	5%	1/10W
R117	1-216-025-11	RES-CHIP	100	5%	1/10W
R118	1-216-021-00	RES-CHIP	68	5%	1/10W
R119	1-216-113-00	RES-CHIP	470K	5%	1/10W
R120	1-216-113-00	RES-CHIP	470K	5%	1/10W
R122	1-216-113-00	RES-CHIP	470K	5%	1/10W
R123	1-216-037-00	RES-CHIP	330	5%	1/10W
R130	1-216-019-00	RES-CHIP	56	5%	1/10W
R133	1-216-019-00	RES-CHIP	56	5%	1/10W
R140	1-216-019-00	RES-CHIP	56	5%	1/10W
R151	1-219-742-11	CARBON	47	5%	1/2W
R161	1-215-395-00	METAL	82	1%	1/4W
R201	1-215-395-00	METAL	82	1%	1/4W
R204	1-216-009-91	RES-CHIP	22	5%	1/10W
R206	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R207	1-216-675-91	METAL CHIP	10K	0.5%	1/10W
R208	1-216-049-11	RES-CHIP	1K	5%	1/10W
R209	1-216-041-00	RES-CHIP	470	5%	1/10W
R210	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R211	1-249-403-11	CARBON	68	5%	1/4W F
R215	1-216-107-00	RES-CHIP	270K	5%	1/10W
R217	1-216-025-11	RES-CHIP	100	5%	1/10W
R218	1-216-013-00	RES-CHIP	33	5%	1/10W
R219	1-216-113-00	RES-CHIP	470K	5%	1/10W
R220	1-216-113-00	RES-CHIP	470K	5%	1/10W
R222	1-216-113-00	RES-CHIP	470K	5%	1/10W
R223	1-216-037-00	RES-CHIP	330	5%	1/10W
R230	1-216-019-00	RES-CHIP	56	5%	1/10W
R233	1-216-019-00	RES-CHIP	56	5%	1/10W
R240	1-216-019-00	RES-CHIP	56	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R251	1-219-742-11	CARBON	47	5%	1/2W
R261	1-215-395-00	METAL	82	1%	1/4W
R301	1-215-395-00	METAL	82	1%	1/4W
R304	1-216-009-91	RES-CHIP	22	5%	1/10W
R306	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R307	1-216-675-91	METAL CHIP	10K	0.5%	1/10W
R308	1-216-049-11	RES-CHIP	1K	5%	1/10W
R309	1-216-041-00	RES-CHIP	470	5%	1/10W
R310	1-216-071-00	RES-CHIP	8.2K	5%	1/10W
R311	1-249-403-11	CARBON	68	5%	1/4W F
R315	1-216-107-00	RES-CHIP	270K	5%	1/10W
R317	1-216-025-11	RES-CHIP	100	5%	1/10W
R318	1-216-013-00	RES-CHIP	33	5%	1/10W
R319	1-216-113-00	RES-CHIP	470K	5%	1/10W
R320	1-216-113-00	RES-CHIP	470K	5%	1/10W
R322	1-216-113-00	RES-CHIP	470K	5%	1/10W
R323	1-216-037-00	RES-CHIP	330	5%	1/10W
R330	1-216-023-00	RES-CHIP	82	5%	1/10W
R333	1-216-019-00	RES-CHIP	56	5%	1/10W
R340	1-216-019-00	RES-CHIP	56	5%	1/10W
R351	1-219-742-11	CARBON	47	5%	1/2W
R361	1-215-395-00	METAL	82	1%	1/4W

<SPARK GAP>

SG001	1-519-422-11	GAP, SPARK
SG002	1-576-354-21	GAP, DISCHARGE
SG101	1-576-354-21	GAP, DISCHARGE
SG201	1-576-354-21	GAP, DISCHARGE
SG301	1-576-354-21	GAP, DISCHARGE

<CRYSTAL>

X001	1-781-472-21	VIBRATOR, CERAMIC (8MHz)

****

* 8-933-463-00 D BOARD, COMPLETE
****

1-533-223-11 HOLDER, FUSE (F601)
3-710-578-01 COVER, VOLUME, 6 MOLD (RV901)
4-047-285-01 SHEET, INSULATING (Q505)
4-382-854-01 SCREW (M3X8), P, SW (+) (D614, D619, IC401, IC502, IC604, IC605, IC609, IC610, IC703, Q506, Q511, Q512, Q513, Q605, Q704,Q705,Q901,Q902,R510)
4-382-854-11 SCREW (M3X10), P, SW (+) (D504,Q505)
4-382-854-21 SCREW (M3X14), P, SW (+) (IC702)

<CAPACITOR>

C401	1-128-730-91	ELECT	470uF	20%	25V
C402	1-137-401-11	MYLAR	0.22uF	10%	100V
C403	1-128-749-91	ELECT	220uF	20%	50V
C404	1-128-730-91	ELECT	470uF	20%	25V
C406	1-137-366-11	MYLAR	0.0022uF	5%	50V

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION			REMARK
C407	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C409	1-126-968-11	ELECT	100uF	20%	50V
C500	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C501	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C503	1-137-150-11	MYLAR	0.01uF	5%	50V
C504	1-137-368-11	MYLAR	0.0047uF	5%	50V
C505	1-128-729-91	ELECT	330uF	20%	25V
C506	1-127-810-51	ELECT MELF	22uF	20%	250V
C507	1-136-187-11	MYLAR	0.047uF	10%	250V
C508	1-117-959-11	FILM	4700pF	3%	1.8KV
C509	1-107-444-11	CERAMIC	100pF	5%	2KV
C510	1-136-684-51	MYLAR	0.0022uF	10%	100V
C511	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C512	1-102-114-00	CERAMIC	470pF	10%	50V
C513	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C514	1-137-368-11	MYLAR	0.0047uF	5%	50V
C515	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C516	1-126-382-11	ELECT	100uF	20%	16V
C517	1-163-263-11	CERAMIC CHIP	330pF	5%	50V
C518	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C520	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V
C521	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C522	1-126-965-11	ELECT	22uF	20%	50V
C523	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C524	1-126-382-11	ELECT	100uF	20%	16V
C525	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C527	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C528	1-130-489-00	MYLAR	0.033uF	5%	50V
C529	1-137-150-11	MYLAR	0.01uF	5%	50V
C530	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C531	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C532	1-107-906-11	ELECT	10uF	20%	50V
C533	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C534	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C535	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C536	1-107-665-11	ELECT	0.47uF	20%	400V
C537	1-107-770-11	FILM	0.16uF	3%	400V
C538	1-107-651-11	ELECT	4.7uF	20%	250V
C539	1-117-673-11	FILM	1.5uF	5%	250V
C540	1-107-888-11	ELECT	47uF	20%	25V
C541	1-109-844-11	FILM	0.68uF	5%	250V
C542	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C543	1-117-665-11	FILM	0.33uF	5%	250V
C544	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C545	1-117-661-71	FILM	0.15uF	5%	250V
C546	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C547	1-119-860-11	FILM	0.082uF	5%	250V
C548	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C549	1-117-953-91	FILM	0.033uF	5%	400V
C550	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C551	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C553	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C554	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C555	1-137-194-81	MYLAR	0.47uF	5%	50V
C556	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C557	1-126-935-11	ELECT	470uF	20%	16V
C558	1-163-007-11	CERAMIC CHIP	680pF	10%	50V
C559	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C560	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C562	1-163-001-11	CERAMIC CHIP	220pF	10%	50V
C563	1-113-340-11	ELECT	47uF	20%	25V
C564	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C565	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C607	1-109-982-11	CERAMIC CHIP	1µF	10%	10V
C608	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C609	1-113-912-11	CERAMIC	0.0047uF	20%	250V
C610	1-117-769-91	CERAMIC	680pF	10%	2KV
C611	1-117-753-11	ELECT(BLOCK)	470uF	20%	450V
C612	1-131-985-21	FILM	0.033µF	5%	250V
C613	1-104-664-11	ELECT	47uF	20%	25V
C614	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C615	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C616	1-102-228-00	CERAMIC	470pF	10%	500V
C617	1-117-769-91	CERAMIC	680pF	10%	2KV
C618	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C619	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C620	1-128-551-11	ELECT	22uF	20%	25V
C621	1-131-723-21	ELECT(BLOCK)	220uF	20%	250V
C622	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V
C623	1-107-933-11	ELECT	100uF	20%	100V
C624	1-104-666-11	ELECT	220uF	20%	25V
C625	1-115-789-11	ELECT	0.001F	20%	25V
C626	1-115-791-11	ELECT	0.0018F	20%	25V
C627	1-115-789-11	ELECT	0.001F	20%	25V
C628	1-107-890-11	ELECT	2200uF	20%	25V
C629	1-126-935-11	ELECT	470uF	20%	16V
C630	1-126-935-11	ELECT	470uF	20%	16V
C631	1-128-526-11	ELECT	100uF	20%	25V
C632	1-104-653-11	ELECT	220uF	20%	16V
C633	1-126-934-11	ELECT	220uF	20%	10V
C634	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C635	1-126-965-11	ELECT	22uF	20%	50V
C636⚠	1-113-900-51	CERAMIC	470pF	10%	250V
C637⚠	1-113-900-51	CERAMIC	470pF	10%	250V
C638⚠	1-104-708-51	MYLAR	0.47uF	20%	250V
C640	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C641	1-163-007-11	CERAMIC CHIP	680pF	10%	50V
C642	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C644	1-136-187-11	MYLAR	0.047uF	10%	250V
C645	1-126-934-11	ELECT	220uF	20%	16V
C646	1-107-882-91	ELECT	100uF	20%	16V
C647	1-107-882-91	ELECT	100uF	20%	16V
C648	1-128-744-91	ELECT	10uF	20%	50V
C650	1-162-117-00	CERAMIC	100pF	10%	500V
C653	1-126-942-61	ELECT	1000uF	20%	25V
C654	1-104-666-11	ELECT	220uF	20%	25V
C656	1-104-664-11	ELECT	47uF	20%	25V
C657	1-162-318-11	CERAMIC	0.001uF	10%	500V
C658	1-162-815-11	CERAMIC	47pF	5%	500V
C659	1-109-982-11	CERAMIC CHIP	1µF	10%	10V
C660	1-136-189-00	MYLAR	0.1µF	10%	250V

D

REF.NO.	PART NO.	DESCRIPTION			REMARK
C701	1-163-003-11	CERAMIC CHIP	330pF	10%	50V
C703	1-163-003-11	CERAMIC CHIP	330pF	10%	50V
C704	1-130-495-00	MYLAR	0.1uF	5%	50V
C705	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C706	1-130-495-00	MYLAR	0.1uF	5%	50V
C707	1-126-942-61	ELECT	1000uF	20%	25V
C708	1-126-942-61	ELECT	1000uF	20%	25V
C711	1-163-113-00	CERAMIC CHIP	68pF	5%	50V
C712	1-163-113-00	CERAMIC CHIP	68pF	5%	50V
C713	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C714	1-126-960-11	ELECT	1uF	20%	50V
C716	1-136-177-00	MYLAR	1uF	5%	50V
C717	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C718	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C719	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C720	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C721	1-128-562-11	ELECT	47uF	20%	100V
C723	1-128-561-91	ELECT	33uF	20%	100V
C724	1-162-134-11	CERAMIC	470pF	10%	2KV
C725	1-126-965-11	ELECT	22uF	20%	50V
C726	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C727	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C728	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C729	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C730	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C731	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C732	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C900	1-128-744-91	ELECT	10µF	20%	50V
C901	1-104-665-11	ELECT	100uF	20%	25V
C902	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C903	1-107-904-11	ELECT	3.3uF	20%	50V
C904	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C905	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C906	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C907	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C908	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C909	1-104-665-11	ELECT	100uF	20%	25V
C910	1-163-259-91	CERAMIC CHIP	220pF	5%	50V
C911	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C912	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C913	1-119-748-11	ELECT	33uF	20%	400V
C914	1-136-187-11	MYLAR	0.047uF	10%	250V
C915	1-137-367-11	MYLAR	0.0033uF	5%	50V
C916	1-117-665-11	FILM	0.33uF	5%	250V
C917	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C918	1-117-626-11	FILM	2000pF	3%	1.2KV
C919	1-115-349-51	CERAMIC	0.01uF		2KV
C920	1-115-349-51	CERAMIC	0.01uF		2KV
C921	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C922	1-126-963-11	ELECT	4.7uF	20%	50V
C923	1-126-964-11	ELECT	10uF	20%	50V
C924	1-104-665-11	ELECT	100uF	20%	25V
C925	1-137-150-11	MYLAR	0.01uF	5%	50V
C926	1-106-220-00	MYLAR	0.1uF	10%	100V
C927	1-106-351-00	MYLAR	0.0022uF	20%	200V
C929	1-126-965-11	ELECT	22uF	20%	50V
C930	1-137-150-11	MYLAR	0.01uF	5%	50V
C931	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1001	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C1006	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C1013	1-126-926-11	ELECT	1000uF	20%	10V
C1024	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C1025	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C1026	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C1030	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C1031	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C1036	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C1037	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C1038	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C1042	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C1046	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C1047	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C1050	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C1056	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C1057	1-163-243-11	CERAMIC CHIP	47pF	5%	50V
C1061	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C1062	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C1063	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C1064	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

<CONNECTOR>

CN501*	1-580-798-11	CONNECTOR PIN (DY)	6P
CN600*	1-691-960-11	PIN, CONNECTOR (PC BOARD)	3P
CN601*	1-580-689-11	PIN, CONNECTOR (PC BOARD)	4P
CN603*	1-564-510-11	PLUG, CONNECTOR	7P
CN701*	1-564-511-11	PLUG, CONNECTOR	8P
CN702*	1-564-506-11	PLUG, CONNECTOR	3P
CN901	1-695-915-11	TAB (CONTACT)	
CN1001*	1-508-879-11	BASE POST	
CN1002*	1-564-511-11	PLUG, CONNECTOR	8P
CN1003*	1-564-515-11	PLUG, CONNECTOR	12P
CN1004*	1-564-509-11	PLUG, CONNECTOR	6P
CN1005	1-793-585-11	PIN, CONNECTOR (PC BOARD)	15P
CN1006	1-793-586-11	PIN, CONNECTOR (PC BOARD)	15P

<DIODE>

D401	8-719-979-58	DIODE EGP10D
D402	8-719-158-15	ZENER DIODE RD5.6SB
D405	8-719-991-33	DIODE 1SS133T-77
D501	8-719-110-47	ZENER DIODE RD18ESB
D502	8-719-975-77	DIODE SB340
D503	8-719-110-47	ZENER DIODE RD18ESB
D504	8-719-061-21	DIODE FMQ-G5FMS
D505	8-719-052-86	DIODE D2L40-TA
D506	8-719-976-96	ZENER DIODE DTZ4.7C
D507	8-719-073-01	DIODE MA111-(K8).S0
D508	8-719-073-01	DIODE MA111-(K8).S0
D509	8-719-073-01	DIODE MA111-(K8).S0
D510	8-719-073-01	DIODE MA111-(K8).S0
D511	8-719-073-01	DIODE MA111-(K8).S0
D512	8-719-073-01	DIODE MA111-(K8).S0

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

D

REF.NO.	PART NO.	DESCRIPTION	REMARK
D514	8-719-109-81	ZENER DIODE RD4.7ESB2	
D515	8-719-073-01	DIODE MA111-(K8).S0	
D516	8-719-951-30	DIODE ERA91-02	
D517	8-719-978-65	ZENER DIODE DTZ-TT11-15B	
D518	8-719-110-17	ZENER DIODE RD10ESB2	
D519	8-719-976-96	ZENER DIODE DTZ4.7C	
D607	8-719-073-01	DIODE MA111-(K8).S0	
D608	8-719-991-33	DIODE 1SS133T-77	
D609	8-719-053-19	DIODE UF4007G23	
D610	8-719-921-40	DIODE MTZJ-4.7C	
D611	8-719-053-19	DIODE UF4007G23	
D612	8-719-110-49	ZENER DIODE RD18ESB2	
D613	8-719-300-76	DIODE RH-1A	
D614	8-719-067-68	DIODE FMC-26UA	
D615	8-719-053-19	DIODE UF4007G23	
D616	8-719-076-20	DIODE BT149G-412-OT359	
D617	8-719-991-33	DIODE 1SS133T-77	
D618	8-719-069-63	DIODE ERB38-06V1	
D619	8-719-058-38	DIODE FMN-G12S	
D620	8-719-510-41	DIODE D10SC9M	
D621	8-719-979-58	DIODE EGP10D	
D622	8-719-074-79	DIODE YG911S2R	
D623	8-719-979-58	DIODE EGP10D	
D624	8-719-979-58	DIODE EGP10D	
D625 ⚠	8-719-510-63	DIODE D4SB60L-F	
D626	8-719-991-33	DIODE 1SS133T-77	
D627	8-719-110-08	ZENER DIODE RD8.2ESB2	
D628	8-719-991-33	DIODE 1SS133T-77	
D629	8-719-073-01	DIODE MA111-(K8).S0	
D630	8-719-110-41	ZENER DIODE RD15ESB2	
D634	8-719-991-33	DIODE 1SS133T-77	
D635	8-719-991-33	DIODE 1SS133T-77	
D636	8-719-158-49	ZENER DIODE RD12SB2	
D701	8-719-991-33	DIODE 1SS133T-77	
D702	8-719-991-33	DIODE 1SS133T-77	
D703	8-719-991-33	DIODE 1SS133T-77	
D705	8-719-158-49	ZENER DIODE RD12SB2	
D901	8-719-073-01	DIODE MA111-(K8).S0	
D903	8-719-073-01	DIODE MA111-(K8).S0	
D904	8-719-073-01	DIODE MA111-(K8).S0	
D906	8-719-978-65	ZENER DIODE DTZ-TT11-15B	
D907	8-719-052-86	DIODE D2L40-TA	
D908	8-719-073-01	DIODE MA111-(K8).S0	
D909	8-719-978-65	ZENER DIODE DTZ-TT11-15B	
D910	8-719-028-72	DIODE RGP02-17EL-6433	
D911	8-719-028-72	DIODE RGP02-17EL-6433	
D912	8-719-110-46	ZENER DIODE RD16ESB3	
D913	8-719-110-46	ZENER DIODE RD16ESB3	
D914	8-719-970-83	DIODE HSS82	
D915	8-719-109-85	ZENER DIODE RD5.1ESB2	
D916	8-719-158-49	ZENER DIODE RD12SB2	
D917	8-719-929-15	ZENER DIODE HZS9.1NB2	
D920	8-719-158-15	ZENER DIODE RD5.6SB	
D921	8-719-158-15	ZENER DIODE RD5.6SB	
D922	8-719-073-01	DIODE MA111-(K8).S0	

REF.NO.	PART NO.	DESCRIPTION			REMARK
D1002	1-216-295-11	SHORT	0		
D1003	1-218-772-11	METAL CHIP	680K	0.5%	1/10W
D1007	8-719-158-15	ZENER DIODE RD5.6SB			
D1008	8-719-158-15	ZENER DIODE RD5.6SB			
D1009	8-719-158-15	ZENER DIODE RD5.6SB			
D1010	8-719-158-15	ZENER DIODE RD5.6SB			
D1011	8-719-158-15	ZENER DIODE RD5.6SB			
D1012	8-719-158-15	ZENER DIODE RD5.6SB			
D1013	8-719-158-15	ZENER DIODE RD5.6SB			
D1014	8-719-158-15	ZENER DIODE RD5.6SB			
D1018	8-719-073-01	DIODE MA111-(K8).S0			
D1021	8-719-062-51	DIODE 1PS226-115			
D1022	8-719-062-51	DIODE 1PS226-115			
D1024	8-719-073-01	DIODE MA111-(K8).S0			
D1025	8-719-158-15	ZENER DIODE RD5.6SB			
D1027	1-216-065-91	RES-CHIP	4.7k	5%	1/10W
		<FUSE>			
F601 ⚠	1-576-233-11	FUSE (H.B.C.) (6.3A/250V)			
		<FERRITE BEAD>			
FB501	1-412-911-11	FERRITE	1.1uH		
FB502	1-543-960-22	FERRITE			
FB901	1-412-911-11	FERRITE	1.1uH		
FB1000	1-216-295-91	SHORT	0		
FB1001	1-216-025-11	RES-CHIP	100	5%	1/10W
FB1002	1-216-025-11	RES-CHIP	100	5%	1/10W
FB1004	1-216-295-11	SHORT	0		
		<IC>			
IC401	8-759-593-28	IC LA78040			
IC501	8-759-585-82	IC BA9759F-E2			
IC502	8-759-803-42	IC LA6500-FA			
IC503	8-759-100-96	IC uPC4558G2			
IC603	8-759-594-75	IC TEA1504/N2			
IC604	8-759-637-83	IC PQ12RD8S			
IC605	8-759-496-15	IC BA05ST-V5			
IC607	8-749-016-35	IC TLP621D4-Y-LF2T			
IC608	8-759-586-17	IC TL1431CZ-AP			
IC609	8-759-450-47	IC BA05T			
IC610	8-759-592-79	IC BA00AST-V5			
IC701	8-759-822-38	IC LA6510			
IC702	8-749-015-00	IC STK391-110			
IC703	8-759-803-42	IC LA6500-FA			
IC901	8-759-585-81	IC BA9758FS-E2			
IC1001	8-759-656-96	IC CXD9523S/JCN			
IC1003	8-759-420-77	IC PST574CMT-T1			
IC1005	8-759-641-86	IC BR24C16F-E2			
		<CHIP CONDUCTOR>			
JR43	1-216-296-91	SHORT	0		
JR45	1-216-295-11	SHORT	0		

D

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION		REMARK
JR54	1-216-295-11	SHORT	0	
JR55	1-216-296-91	SHORT	0	
JR002	1-216-296-91	SHORT	0	
JR004	1-216-296-91	SHORT	0	
JR006	1-216-296-91	SHORT	0	
JR007	1-216-295-11	SHORT	0	
JR008	1-216-296-91	SHORT	0	
JR010	1-216-296-91	SHORT	0	
JR011	1-216-296-91	SHORT	0	
JR015	1-216-296-91	SHORT	0	
JR016	1-216-296-91	SHORT	0	
JR017	1-216-296-91	SHORT	0	
JR019	1-216-296-91	SHORT	0	
JR020	1-216-296-91	SHORT	0	
JR021	1-216-296-91	SHORT	0	
JR023	1-216-296-91	SHORT	0	
JR024	1-216-295-11	SHORT	0	
JR026	1-216-296-91	SHORT	0	
JR027	1-216-295-11	SHORT	0	
JR028	1-216-295-11	SHORT	0	
JR029	1-216-295-11	SHORT	0	
JR031	1-216-295-11	SHORT	0	
JR032	1-216-296-91	SHORT	0	
JR033	1-216-296-91	SHORT	0	
JR034	1-216-296-91	SHORT	0	
JR035	1-216-296-91	SHORT	0	
JR036	1-216-295-11	SHORT	0	
JR037	1-216-296-91	SHORT	0	
JR038	1-216-296-91	SHORT	0	
JR039	1-216-296-91	SHORT	0	
JR040	1-216-295-11	SHORT	0	
JR042	1-216-296-91	SHORT	0	
JR046	1-216-296-91	SHORT	0	
JR050	1-216-295-91	SHORT	0	
JR051	1-216-296-91	SHORT	0	
JR052	1-216-296-91	SHORT	0	
JR053	1-216-295-11	SHORT	0	
JR057	1-216-295-11	SHORT	0	
JR602	1-216-295-11	SHORT	0	
JR603	1-216-295-11	SHORT	0	
JR604	1-216-295-11	SHORT	0	
JR606	1-216-295-11	SHORT	0	
JR608	1-216-295-11	SHORT	0	
		<COIL>		
L501	1-412-541-21	INDUCTOR	220uH	
L502	1-419-299-11	COIL, HORIZONTAL LINEARITY		
L503	1-419-298-11	COIL, HORIZONTAL CENTER		
L504	1-406-675-11	INDUCTOR	4.7mH	
L505	1-406-675-11	INDUCTOR	4.7mH	
L506	1-406-675-11	INDUCTOR	4.7mH	
L507	1-412-537-31	INDUCTOR	100uH	
L601	1-419-653-11	INDUCTOR	56mH	
L603	1-412-537-31	INDUCTOR	100uH	
L604	1-406-665-11	INDUCTOR	100uH	
L606	1-406-665-11	INDUCTOR	100uH	
L607	1-414-158-11	INDUCTOR	2.2uH	
L608	1-414-487-41	INDUCTOR	1uH	
L901	1-412-537-31	INDUCTOR	100uH	
L902	1-406-659-11	INDUCTOR	10uH	
		<FILTER>		
LF602⚠	1-429-180-11	TRANSFORMER, LINE FILTER		
		<TRANSISTOR>		
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6		
Q502	8-729-901-87	TRANSISTOR 2SC2411K-CQ		
Q503	8-729-026-50	TRANSISTOR 2SA1037AK-T146-QR		
Q504	8-729-042-34	TRANSISTOR IRFU110A		
Q505	8-729-050-12	TRANSISTOR 2SC5445(LBSONY1)		
Q506	8-729-050-13	TRANSISTOR 2SJ585LS-CC11		
Q507	8-729-120-28	TRANSISTOR 2SC1623-L5L6		
Q508	8-729-901-87	TRANSISTOR 2SC2411K-CQ		
Q509	8-729-901-97	TRANSISTOR 2SA1036K-Q		
Q510	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		
Q511	8-729-043-41	TRANSISTOR 2SK2098-01MR-F119		
Q512	8-729-043-41	TRANSISTOR 2SK2098-01MR-F119		
Q513	8-729-043-41	TRANSISTOR 2SK2098-01MR-F119		
Q514	8-729-047-72	TRANSISTOR 2SK3155-01		
Q515	8-729-047-72	TRANSISTOR 2SK3155-01		
Q516	8-729-047-72	TRANSISTOR 2SK3155-01		
Q517	8-729-140-50	TRANSISTOR 2SC3209LK		
Q519	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R		
Q605	8-729-050-14	TRANSISTOR 2SK3265LB2SONY		
Q606	8-729-043-27	TRANSISTOR PDTC114EK-115		
Q607	8-729-423-33	TRANSISTOR 2SC3311A-QRSTA		
Q608	8-729-029-92	TRANSISTOR DTC143ESA		
Q609	8-729-119-78	TRANSISTOR 2SC2785-HFE		
Q701	8-729-800-32	TRANSISTOR 2SC2362K-G		
Q702	8-729-178-43	TRANSISTOR 2SC2784-E		
Q703	8-729-204-91	TRANSISTOR 2SA1049-GR		
Q704	8-729-207-82	TRANSISTOR 2SC3421-Y		
Q705	8-729-207-89	TRANSISTOR 2SA1358-Y		
Q706	8-729-031-89	TRANSISTOR 2SC3941A-Q (TA)		
Q901	8-729-050-13	TRANSISTOR 2SJ585LS-CC11		
Q902	8-729-041-45	TRANSISTOR FS5KM-16A		
Q903	8-729-120-28	TRANSISTOR 2SC1623-L5L6		
Q904	8-729-901-97	TRANSISTOR 2SA1036K-Q		
		<RESISTOR>		
R401	1-249-383-11	CARBON	1.5 5% 1/4W F	
R402	1-215-866-11	METAL OXIDE	330 5% 1W F	
R403	1-214-796-00	METAL	1.5 1% 1/2W	
R404	1-215-449-00	METAL	15K 1% 1/4W	
R405	1-214-796-00	METAL	1.5 1% 1/2W	
R406	1-216-663-11	METAL CHIP	3.3K 0.5% 1/10W	
R407	1-249-397-11	CARBON	22 5% 1/4W F	
R408	1-216-081-00	RES-CHIP	22K 5% 1/10W	
R409	1-216-679-11	METAL CHIP	15K 0.5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION				REMARK
R410	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R416	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R417	1-216-113-00	RES-CHIP	470K	5%	1/10W	
R418	1-216-105-91	RES-CHIP	220K	5%	1/10W	
R501	1-216-049-91	RES-CHIP	1K	5%	1/10W	
R502	1-216-025-91	RES-CHIP	100	5%	1/10W	
R503	1-216-033-00	RES-CHIP	220	5%	1/10W	
R504	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R505	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R506	1-247-807-31	CARBON	100	5%	1/4W	
R507	1-249-433-11	CARBON	22K	5%	1/4W	
R508	1-215-861-00	METAL OXIDE	47	5%	1W	F
R509	1-249-381-11	CARBON	1	5%	1/4W	F
R510	1-219-677-11	METAL	1.8	5%	10W	
R511	1-249-377-11	CARBON	0.47	5%	1/4W	F
R512	1-214-842-11	METAL	120	1%	1/2W	
R513	1-216-423-11	METAL OXIDE	27	5%	1W	F
R514	1-249-393-11	CARBON	10	5%	1/4W	F
R515	1-249-425-11	CARBON	4.7K	5%	1/4W	
R516	1-249-425-11	CARBON	4.7K	5%	1/4W	
R517	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R518	1-216-033-00	RES-CHIP	220	5%	1/10W	
R519	1-216-025-11	RES-CHIP	100	5%	1/10W	
R520	1-216-033-00	RES-CHIP	220	5%	1/10W	
R521	1-247-807-31	CARBON	100	5%	1/4W	
R522	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R523	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R524	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R525	1-216-657-11	METAL CHIP	1.8K	0.5%	1/10W	
R526	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R527	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R528	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R529	1-216-099-00	RES-CHIP	120K	5%	1/10W	
R530	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R531	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R532	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R533	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R535	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R536	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R537	1-216-683-11	METAL CHIP	22K	0.5%	1/10W	
R538	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R539	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	
R540	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R541	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R542	1-214-842-11	METAL	120	1%	1/2W	
R543	1-214-842-11	METAL	120	1%	1/2W	
R544	1-249-393-11	CARBON	10	5%	1/4W	F
R545	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R546	1-215-909-11	METAL OXIDE	47	5%	3W	F
R547	1-215-387-00	METAL	39	1%	1/4W	
R548	1-260-318-71	CARBON	150	5%	1/2W	
R549	1-260-314-11	CARBON	68	5%	1/2W	
R550	1-247-903-00	CARBON	1M	5%	1/4W	
R552	1-249-437-11	CARBON	47K	5%	1/4W	
R553	1-249-437-11	CARBON	47K	5%	1/4W	
R555	1-249-437-11	CARBON	47K	5%	1/4W	
R557	1-249-437-11	CARBON	47K	5%	1/4W	
R559	1-249-437-11	CARBON	47K	5%	1/4W	
R561	1-249-437-11	CARBON	47K	5%	1/4W	
R563	1-249-405-11	CARBON	100	5%	1/4W	F
R564	1-249-405-11	CARBON	100	5%	1/4W	F
R565	1-249-405-11	CARBON	100	5%	1/4W	F
R566	1-249-405-11	CARBON	100	5%	1/4W	F
R567	1-249-405-11	CARBON	100	5%	1/4W	F
R568	1-249-405-11	CARBON	100	5%	1/4W	F
R569	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R570	1-216-674-11	METAL CHIP	9.1K	0.5%	1/10W	
R572	1-249-429-11	CARBON	10K	5%	1/4W	
R573	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R574	1-249-404-00	CARBON	82	5%	1/4W	
R575	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R576	1-216-097-11	RES-CHIP	100K	5%	1/10W	
R577	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R579	1-216-025-11	RES-CHIP	100	5%	1/10W	
R580	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R581	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W	
R582	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R583	1-216-675-91	METAL CHIP	10K	0.5%	1/10W	
R584	1-216-473-11	METAL OXIDE	56	5%	3W	F
R585	1-216-381-11	METAL OXIDE	0.22	5%	3W	F
R586	1-260-125-11	CARBON	150K	5%	1/2W	
R587	1-216-641-11	METAL CHIP	390	0.5%	1/10W	
R601	1-249-425-11	CARBON	4.7K	5%	1/4W	
R615	1-216-615-91	METAL CHIP	33	0.5%	1/10W	
R625	1-202-933-61	FUSIBLE	0.1	10%	1/2W	
R626	1-215-927-00	METAL OXIDE	47K	5%	3W	F
R627	1-219-513-11	CARBON	4.7M	5%	1/2W	
R628	1-218-772-11	MATAL CHIP	680K	0.5%	1/10W	
R629	1-218-758-11	METAL CHIP	180K	0.5%	1/10W	
R630	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R631	1-216-651-11	METAL CHIP	1K	0.5%	1/10W	
R632	1-218-758-11	METAL CHIP	180K	0.5%	1/10W	
R633	1-216-687-11	METAL CHIP	33K	0.5%	1/10W	
R635	1-218-754-11	METAL CHIP	120K	0.5%	1/10W	
R636	1-249-397-11	CARBON	22	5%	1/4W	F
R637	1-215-893-11	METAL OXIDE	1.5K	5%	2W	F
R638	1-215-893-11	METAL OXIDE	1.5K	5%	2W	F
R639	1-216-609-11	METAL CHIP	18	0.5%	1/10W	
R640	1-216-344-00	METAL OXIDE	0.39	5%	1W	F
R641	1-216-345-11	METAL OXIDE	0.47	5%	1W	F
R642	1-249-381-11	CARBON	1	5%	1/4W	F
R643	1-247-791-91	CARBON	22	5%	1/4W	
R644	1-247-807-31	CARBON	100	5%	1/4W	
R649	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R650	1-211-874-71	FUSIBLE MELF	0.12	10%	1/2W	
R651	1-249-441-11	CARBON	100K	5%	1/4W	
R652	1-215-923-00	METAL OXIDE	10K	5%	3W	F
R653	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R657	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R658	1-216-346-00	METAL OXIDE	0.56	5%	1W	F
R659	1-249-425-11	CARBON	4.7K	5%	1/4W	

D

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R664	1-215-902-11	METAL OXIDE	47K	5%	2W	F
R671	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R672	1-249-407-11	CARBON	150	5%	1/4W	
R673	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R674 ⚠	1-220-827-91	REGISTER	560K	5%	1/2W	
R676	1-215-467-00	METAL	82K	1%	1/4W	
R677	1-216-025-11	RES-CHIP	100	5%	1/10W	
R678	1-216-645-11	METAL CHIP	560	0.5%	1/10W	
R679	1-215-467-00	METAL	82K	1%	1/4W	
R680	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R681	1-215-466-00	METAL	75K	1%	1/4W	
R682	1-215-463-00	METAL	56K	1%	1/4W	
R684	1-216-009-91	RES-CHIP	22	5%	1/10W	
R685	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R686	1-216-675-91	METAL CHIP	10K	0.5%	1/10W	
R687	1-216-689-11	RES-CHIP	39K	5%	1/10W	
R689	1-216-663-11	METAL CHIP	3.3K	0.5%	1/10W	
R690	1-216-668-11	METAL CHIP	5.1K	0.5%	1/10W	
R691	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W	
R692	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R693	1-219-513-11	CARBON	4.7M	5%	1/2W	
R697	1-215-927-00	METAL OXIDE	47K	5%	3W	F
R698	1-215-927-00	METAL OXIDE	47K	5%	3W	F
R700	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R701	1-249-385-11	CARBON	2.2	5%	1/4W	
R703	1-249-385-11	CARBON	2.2	5%	1/4W	
R705	1-215-863-11	METAL OXIDE	100	5%	1W	F
R706	1-216-423-11	METAL OXIDE	27	5%	1W	F
R707	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R708	1-216-353-00	METAL OXIDE	2.2	5%	1W	F
R709	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R710	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R711	1-216-675-91	METAL CHIP	10K	0.5%	1/10W	
R712	1-216-679-11	METAL CHIP	15K	0.5%	1/10W	
R713	1-215-858-00	METAL OXIDE	15	5%	1W	F
R714	1-215-863-11	METAL OXIDE	100	5%	1W	F
R715	1-216-353-00	METAL OXIDE	2.2	5%	1W	F
R716	1-249-385-11	CARBON	2.2	5%	1/4W	F
R717	1-249-377-11	CARBON	0.47	5%	1/4W	F
R718	1-216-426-11	METAL OXIDE	82	5%	1W	F
R719	1-216-369-00	METAL OXIDE	1	5%	2W	F
R720	1-216-295-11	SHORT	0			
R721	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R722	1-216-426-11	METAL OXIDE	82	5%	1W	F
R723	1-216-295-11	SHORT	0			
R724	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R725	1-216-369-00	METAL OXIDE	1	5%	2W	F
R726	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R727	1-216-666-11	METAL CHIP	4.3K	0.5%	1/10W	
R728	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W	
R729	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	
R730	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R731	1-216-081-00	RES-CHIP	22K	5%	1/10W	
R732	1-249-383-11	CARBON	1.5	5%	1/4W	F
R733	1-215-859-00	METAL OXIDE	22	5%	1W	F
R734	1-215-864-00	METAL OXIDE	150	5%	1W	F
R735	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R736	1-216-049-91	RES-CHIP	1K	5%	1/10W	
R737	1-216-049-91	RES-CHIP	1K	5%	1/10W	
R738	1-216-071-00	RES-CHIP	8.2K	5%	1/10W	
R739	1-249-434-11	CARBON	27K	5%	1/4W	
R740	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R741	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R742	1-216-067-00	RES-CHIP	5.6K	5%	1/10W	
R743	1-216-037-00	RES-CHIP	330	5%	1/10W	
R744	1-249-413-11	CARBON	470	5%	1/4W	F
R745	1-249-389-11	CARBON	4.7	5%	1/4W	F
R746	1-249-389-11	CARBON	4.7	5%	1/4W	F
R747	1-216-357-00	METAL OXIDE	4.7	5%	1W	F
R748	1-219-752-11	CARBON	100K	5%	1/2W	
R749	1-215-437-00	METAL	4.7K	1%	1/4W	
R751	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R752	1-216-085-00	RES-CHIP	33K	5%	1/10W	
R753	1-249-393-11	CARBON	10	5%	1/4W	F
R754	1-216-677-11	METAL CHIP	12K	0.5%	1/10W	
R755	1-216-675-91	METAL CHIP	10K	0.5%	1/10W	
R901	1-216-097-11	RES-CHIP	100K	5%	1/10W	
R902	1-216-089-11	RES-CHIP	47K	5%	1/10W	
R904	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	
R905	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R906	1-216-699-91	METAL CHIP	100K	0.5%	1/10W	
R907	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R908	1-249-425-11	CARBON	4.7K	5%	1/4W	
R909	1-215-913-11	METAL OXIDE	220	5%	3W	F
R910	1-215-913-11	METAL OXIDE	220	5%	3W	F
R911	1-249-397-11	CARBON	22	5%	1/4W	F
R912	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R914	1-216-041-00	RES-CHIP	470	5%	1/10W	
R915	1-249-397-11	CARBON	22	5%	1/4W	F
R916	1-249-385-11	CARBON	2.2	5%	1/4W	F
R917	1-249-385-11	CARBON	2.2	5%	1/4W	F
R918	1-214-964-00	METAL	1M	1%	1/4W	
R919	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R920	1-216-691-11	METAL CHIP	47K	0.5%	1/10W	
R921	1-216-049-11	RES-CHIP	1K	5%	1/10W	
R923	1-215-469-00	METAL	100K	1%	1/4W	
R924	1-216-675-91	METAL CHIP	10K	0.5%	1/10W	
R925	1-218-762-11	METAL CHIP	270K	0.5%	1/10W	
R926	1-216-073-00	RES-CHIP	10K	5%	1/10W	
R927	1-220-823-91	CARBON	6.8K	5%	1/2W	
R928	1-220-825-11	CARBON	330K	5%	1/2W	
R929	1-216-089-91	RES-CHIP	47K	5%	1/10W	
R930	1-219-748-11	CARBON	4.7K	5%	1/2W	
R931	1-219-748-11	CARBON	4.7K	5%	1/2W	
R932	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W	
R933	1-216-666-11	METAL CHIP	4.3K	0.5%	1/10W	
R934	1-249-377-11	CARBON	0.47	5%	1/4W	F
R1001	1-216-675-91	METAL CHIP	10K	0.5%	1/10W	
R1003	1-216-025-11	RES-CHIP	100	5%	1/10W	
R1004	1-216-033-00	RES-CHIP	220	5%	1/10W	
R1005	1-249-409-11	CARBON	220	5%	1/4W	
R1006	1-216-033-00	RES-CHIP	220	5%	1/10W	

The components identified ⚠ marked are critical for safety.
Replace only with the part number specified.

The components identified by ⧓ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1007	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1008	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1010	1-216-033-00	RES-CHIP	220	5%	1/10W
R1011	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1012	1-216-017-91	RES-CHIP	47	5%	1/10W
R1013	1-216-017-91	RES-CHIP	47	5%	1/10W
R1014	1-216-025-11	RES-CHIP	100	5%	1/10W
R1015	1-216-033-00	RES-CHIP	220	5%	1/10W
R1016	1-216-033-00	RES-CHIP	220	5%	1/10W
R1017	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1018	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R1019	1-216-017-91	RES-CHIP	47	5%	1/10W
R1020	1-216-017-91	RES-CHIP	47	5%	1/10W
R1021	1-216-025-11	RES-CHIP	100	5%	1/10W
R1022	1-216-025-11	RES-CHIP	100	5%	1/10W
R1039	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1046	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1047	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1048	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1049	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1050	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1051	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1065	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1070	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1072	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R1073	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1074	1-216-049-11	RES-CHIP	1K	5%	1/10W
R1083	1-216-025-11	RES-CHIP	100	5%	1/10W
R1084	1-216-041-00	RES-CHIP	470	5%	1/10W
R1085	1-216-025-11	RES-CHIP	100	5%	1/10W
R1086	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1092	1-216-033-00	RES-CHIP	220	5%	1/10W
R1094	1-216-113-00	RES-CHIP	470K	5%	1/10W
R1095	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1096	1-216-073-00	RES-CHIP	10K	5%	1/10W
R1097	1-216-077-91	RES-CHIP	15K	5%	1/10W
R1098	1-216-077-91	RES-CHIP	15K	5%	1/10W
R1099	1-216-033-00	RES-CHIP	220	5%	1/10W
R1104	1-216-065-91	RES-CHIP	4.7K	5%	1/10W

<VARIABLE RESISTOR>

⧓RV901⚠ 1-241-767-21 RES, ADJ, CERMET 100K

<RELAY>

RY601⚠ 1-755-067-21 RELAY, AC POWER
RY602⚠ 1-755-318-11 RELAY, POWER

<SWITCH>

S602⚠ 1-771-757-11 SWITCH, PUSH (1KEY) (POWER)

REF.NO.	PART NO.	DESCRIPTION			REMARK
		<SPARK GAP>			
SG901	1-517-499-21	GAP, SPARK			
SG902	1-519-422-11	GAP, SPARK			
SG903	1-519-422-11	GAP, SPARK			
		<TRANSFORMER>			
T501	1-435-188-11	TRANSFORMER, FERRITE (HDT)			
T502	1-411-594-11	INDUCTOR	5mH		
T503	1-435-140-11	TRANSFORMER, FERRITE (LCT)			
T504	1-431-413-21	TRANSFORMER, FERRITE (HST)			
T602	1-435-141-11	TRANSFORMER, CONVERTER (SRT)			
T701	1-435-142-11	TRANSFORMER, FERRITE (DFT)			
T901⚠	X-4560-174-1	TRANSFORMER ASSY, FLYBACK			(NX4700//J1E4)
T902	1-419-345-11	COIL, CHOKE	500uH		
		<THERMISTOR>			
TH600⚠	1-809-260-11	THERMISTOR, POWER			
TH601⚠	1-803-540-11	THERMISTOR			
		<VARISTOR>			
VA601⚠	1-801-268-51	VARISTOR TNR14V471K660			
VA603⚠	1-801-268-51	VARISTOR TNR14V471K660			
		<CRYSTAL>			
X1001	1-567-890-11	VIBRATOR, CRYSTAL (8MHz)			

****

* 8-933-426-00 N BOARD, COMPLETE
****

<CAPACITOR>

C801	1-113-340-11	ELECT	47uF	20%	25V
C803	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C809	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C810	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C811	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C812	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C813	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C814	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C817	1-119-941-11	ELECT	470uF	20%	6.3V
C818	1-113-340-11	ELECT	47uF	20%	25V
C819	1-163-037-11	CERAMIC CHIP	0.022uF	10%	50V
C820	1-119-941-91	ELECT	470uF	20%	6.3V
C821	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C822	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C823	1-163-038-11	CERAMIC CHIP	0.1uF		25V

N

REF.NO.	PART NO.	DESCRIPTION			REMARK
C824	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C825	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C826	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C827	1-119-941-91	ELECT	470uF	20%	6.3V
C828	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V
C829	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C830	1-113-340-11	ELECT	47uF	20%	25V
C832	1-131-722-91	ELECT	100uF	20%	6.3V
C833	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C835	1-163-038-11	CERAMIC CHIP	0.1uF		25V
C837	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C838	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C839	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C840	1-163-017-00	CERAMIC CHIP	0.0047uF	10%	50V
C841	1-163-023-00	CERAMIC CHIP	0.015uF	10%	50V
		<CONNECTOR>			
CN801	1-793-585-11	PIN, CONNECTOR (PC BOARD)			15P
CN802	1-793-586-11	PIN, CONNECTOR (PC BOARD)			15P
		<DIODE>			
D802	8-719-049-09	DIODE 1SS367-T3SONY			
		<FERRITE BEAD>			
FB801	1-543-960-22	FERRITE			
FB802	1-216-295-91	SHORT	0		
FB809	1-543-963-22	FERRITE			
FB810	1-543-963-22	FERRITE			
		<IC>			
IC801	8-759-589-56	IC CXD9517Q			
IC802	8-759-569-45	IC LD1117S33TR			
IC803	8-759-502-82	IC LM324M			
		<CHIP CONDUCTOR>			
JR801	1-216-295-11	SHORT	0		
JR802	1-216-295-11	SHORT	0		
		<TRANSISTOR>			
Q801	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q804	8-729-026-50	TRANSISTOR 2SA1037AK-T146-QR			
Q805	8-729-026-50	TRANSISTOR 2SA1037AK-T146-QR			
		<RESISTOR>			
R801	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R802	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R803	1-216-033-00	RES-CHIP	220	5%	1/10W
R804	1-216-033-00	RES-CHIP	220	5%	1/10W
R805	1-216-033-00	RES-CHIP	220	5%	1/10W
R806	1-216-033-00	RES-CHIP	220	5%	1/10W
R807	1-216-033-00	RES-CHIP	220	5%	1/10W
R808	1-216-033-00	RES-CHIP	220	5%	1/10W
R809	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R810	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R811	1-216-053-00	RES-CHIP	1.5K	5%	1/10W
R812	1-216-049-11	RES-CHIP	1K	5%	1/10W
R813	1-216-049-11	RES-CHIP	1K	5%	1/10W
R814	1-216-031-00	RES-CHIP	180	5%	1/10W
R815	1-216-073-00	RES-CHIP	10K	5%	1/10W
R816	1-218-768-11	METAL CHIP	470K	0.5%	1/10W
R817	1-216-089-11	RES-CHIP	47K	5%	1/10W
R818	1-216-049-11	RES-CHIP	1K	5%	1/10W
R819	1-216-049-11	RES-CHIP	1K	5%	1/10W
R820	1-216-049-11	RES-CHIP	1K	5%	1/10W
R821	1-216-049-11	RES-CHIP	1K	5%	1/10W
R822	1-216-049-11	RES-CHIP	1K	5%	1/10W
R823	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R824	1-216-073-00	RES-CHIP	10K	5%	1/10W
R825	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R826	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R827	1-216-073-00	RES-CHIP	10K	5%	1/10W
R828	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R829	1-216-049-11	RES-CHIP	1K	5%	1/10W
R830	1-216-049-11	RES-CHIP	1K	5%	1/10W
R831	1-216-033-00	RES-CHIP	220	5%	1/10W
R832	1-216-025-11	RES-CHIP	100	5%	1/10W
R833	1-216-651-11	METAL CHIP	1K	0.5%	1/10W
R834	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R835	1-216-089-11	RES-CHIP	47K	5%	1/10W
R836	1-216-049-11	RES-CHIP	1K	5%	1/10W
R837	1-216-648-11	METAL CHIP	750	0.5%	1/10W
R838	1-216-041-00	RES-CHIP	470	5%	1/10W
R839	1-216-117-00	RES-CHIP	680K	5%	1/10W
R840	1-216-650-11	METAL CHIP	910	0.5%	1/10W
R841	1-216-089-91	RES-CHIP	47K	5%	1/10W
R842	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R843	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R844	1-216-017-91	RES-CHIP	47	5%	1/10W
R846	1-216-025-11	RES-CHIP	100	5%	1/10W
R847	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R851	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R852	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R853	1-216-049-11	RES-CHIP	1K	5%	1/10W
R855	1-216-105-91	RES-CHIP	220K	5%	1/10W
R856	1-216-073-00	RES-CHIP	10K	5%	1/10W
R857	1-216-049-11	RES-CHIP	1K	5%	1/10W
R858	1-216-073-00	RES-CHIP	10K	5%	1/10W
R859	1-216-025-11	RES-CHIP	100	5%	1/10W
R860	1-216-025-11	RES-CHIP	100	5%	1/10W
R863	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R866	1-216-049-91	RES-CHIP	1K	5%	1/10W

****

H

REF.NO.	PART NO.	DESCRIPTION			REMARK
*	8-933-425-00	H BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C2002	1-126-786-11	ELECT	47uF	20%	16V
		<CONNECTOR>			
CN2001*	1-564-523-11	PLUG, CONNECTOR	8P		
		<DIODE>			
D2001	8-719-064-11	DIODE SPR-325MVW (POWER)			
D2004	8-719-109-89	ZENER DIODE RD5.6ESB2			
		<TRANSISTOR>			
Q2001	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q2002	8-729-119-76	TRANSISTOR 2SA1175-HFE			
		<RESISTOR>			
R2001	1-249-422-11	CARBON	2.7K	5%	1/4W
R2002	1-249-429-11	CARBON	10K	5%	1/4W
R2003	1-249-429-11	CARBON	10K	5%	1/4W
R2004	1-215-411-00	METAL	390	1%	1/4W
R2005	1-215-417-00	METAL	680	1%	1/4W
R2006	1-249-411-11	CARBON	330	5%	1/4W
R2007	1-249-413-11	CARBON	470	5%	1/4W
R2008	1-249-415-11	CARBON	680	5%	1/4W
R2009	1-249-417-11	CARBON	1K	5%	1/4W
R2011	1-249-421-11	CARBON	2.2K	5%	1/4W
R2012	1-249-429-11	CARBON	10K	5%	1/4W
R2013	1-249-425-11	CARBON	4.7K	5%	1/4W
		<SWITCH>			
S2001	1-571-427-11	SWITCH, SLIDE (INPUT1/INPUT2)			
S2002	1-762-196-21	SWITCH, TACT (H+)			
S2003	1-762-196-21	SWITCH, TACT (RESET)			
S2004	1-762-196-21	SWITCH, TACT (H–)			
S2005	1-762-196-21	SWITCH, TACT (MENU)			
S2006	1-762-196-21	SWITCH, TACT (V+)			
S2007	1-762-196-21	SWITCH, TACT (V–)			
S2008	1-762-196-21	SWITCH, TACT (ASC)			

6551-T3N/6551-U3N

9-978-682-01

2000IL05011-1

English
2000IL05011-1
Printed in Japan
© 2000. 9